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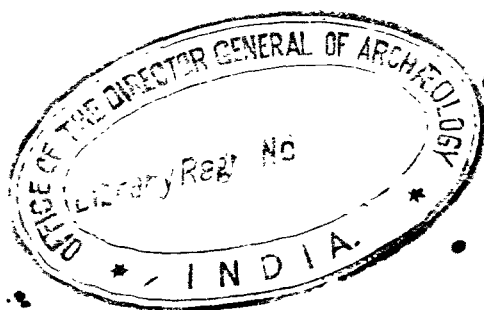
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362

JOURNAL OF THE MALAYAN BRANCH
ROYAL ASIATIC SOCIETY.





INDEX.

Index to Vol. IX (1931).

AUTHORS' NAMES.

	PAGE
<i>Andrieni, E. V.</i> , A Milano Muas	129
<i>Banks, E.</i> , A Popular Account of the Mammals of Borneo (Pt. 2)	1
<i>Chasen, F. N.</i> , Old Singapore	1
<i>Linehan, W.</i> , Notes on Tampang	131
<i>McKerron, P. A. B.</i> , A Trengganu Vocabulary	123
<i>Overbeck, H.</i> , Hikayat Sultan Bustamam	35
<i>Rentse, A.</i> , Note on Kelantan Rejang	139
Two Folktales of Kelantan	141
• Kelantan Names for Bullocks according to their colour	143
Malay Charms, Kelantan	146
<i>Scrivenor, J. B.</i> , Recollections of Cameron's Highlands and Fraser's Hill	2
<i>Strugnell, E. J. and Willbourn, E. S.</i> , An Ascent of Gunong Benom from Raub	15
<i>Wilkinson, R. J.</i> , Mahmud II and Abdul Jalil III	28
The Pēngkalan Kēmpas "Saint"	134
<i>Willbourn, E. S.</i> , see <i>Strugnell, E. J.</i>	
<i>Winstedt, R. O.</i> , A Jelebu Customary Saying	136
Tokin	137
Habis. Bukan	138
Review: Matriarchy in the Malay Peninsula	158



Journal

of the

Malayan Branch

of the

Royal Asiatic Society

25073

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1931

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1932

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CONTENTS Vol. IX.

PART I—MAY, 1931.

	Page
Title Page	i
Contents	ii
Council for 1931	iii
Proceedings of the Annual General Meeting	iv
Annual Report	v
List of Members for 1931	ix
Rules	xxxi
Old Singapore <i>by F. N. Chasen</i>	1
Recollections of Cameron's Highlands and Fraser's Hill <i>by</i> <i>J. B. Scrivenor</i>	2
An Ascent of Gunong Benom from Raub <i>by E. J. Strugnell</i> <i>and E. S. Willbourn</i>	15
Mahmud II and Abdul Jalil III <i>by R. J. Wilkinson</i>	28
Hikayat Sultan Bustamam <i>by H. Overbeck</i>	35
A Trengganu Vocabulary <i>by P. A. B. McKerron</i>	123
A Milano Muas <i>by E. V. Andrieni</i>	129
Notes on Tampang <i>by W. Linehan</i>	131
The Pēngkalan Kēmpas "Saint" <i>by R. J. Wilkinson</i>	134
A Jelebu Customary Saying <i>by R. O. Winstedt</i>	136
Tokin <i>by R. O. Winstedt</i>	137
Habis, Bukan <i>by R. O. Winstedt</i>	138
Notes on Kelantan Rejang <i>by Anker Rentse</i>	139
Two Folktales from Kelantan <i>by Anker Rentse</i>	141
Kelantan Names for Bullocks according to their Colour <i>by</i> <i>Anker Rentse</i>	143
Malay Charms, Kelantan <i>by Anker Rentse</i>	146
Review: Matriarchy in the Malay Peninsula <i>by R. O.</i> <i>Winstedt</i>	158
Notice: Adatrechtbundels	160

PART II—NOVEMBER, 1931.

A Popular Account of the Mammals of Borneo *by E. Banks* 1

LIST OF PLATES—VOL. IX.

PART I.

- I. Map: Cameron's Highlands.
- II. Scrivenor: Cameron's Highlands.
- III. Scrivenor: Cameron's Highlands.
- IV. Scrivenor: Cameron's Highlands.
- V. Strugnell and Willbourn: View of Gunong Benom from Fraser's Hill.
- VI. Strugnell and Willbourn: Banded Schist in Ulu Sungai Terbau.
- VII. Strugnell and Willbourn: A dyke of porphyry, Ulu Sungai Terbau.
- VIII. Strugnell and Willbourn: Mossy forest on Gunong Benom.
- IX. Linehan: Tampang from Pahang.
- X. Linehan: Tampang from Pahang.

PART II.

- XI. Banks: The Scaly Ant-eater and the Smaller Mouse-deer.
- XII. Banks: The Brush-tailed Porcupine and Prevost's Squirrel.
- XIII. Banks: Civet-cats.
- XIV. Banks: The Flying-lemur and the Moon-rat.
- XV. Banks: Tree-shrews.
- XVI. Banks: The Slow Loris.
- XVII. Banks: The Flying Fox and the Tarsier.
- XVIII. Banks: The Lotong and the Pig-tailed Macaque.
- XIX. Banks: The Gibbon and the Orang-Utan.

Two Maps.

Vol. IX

Part I

JOURNAL

of the

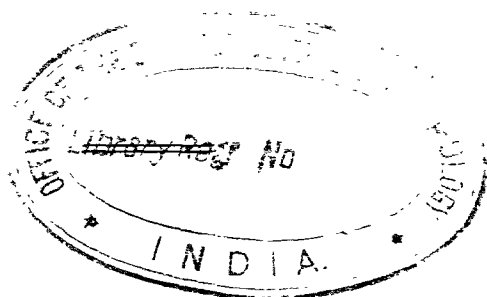
Malayan Branch

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Royal Asiatic Society

Vol. IX

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CONTENTS.

	PAGE
Title Page	i
Contents	ii
Officers and Council, 1931	iii
Proceedings—Annual Meeting	iv
Annual Report, 1930	v
List of Members, 1931	ix
Rules	xxxi
Old Singapore <i>by F. N. Chasen</i>	1
Recollections of Cameron's Highlands and Fraser's Hill <i>by</i> <i>J. B. Scrivenor</i>	2
An Ascent of Gunong Benom from Raub <i>by E. J. Strugnell</i> <i>and E. S. Willbourn</i>	15
Mahmud II and Abdul Jalil III <i>by R. J. Wilkinson, C.M.G.</i> ..	28
Hikayat Sultan Bustamam <i>by H. Overbeck</i>	35
A Trengganu Vocabulary <i>by P. A. B. McKerron, M.C.S.</i> ..	123
A Milano Muas <i>by E. V. Andrieni</i>	129
Notes on Tampang <i>by W. Linehan</i>	131
The Pěngkalan Kěmpas "Saint" <i>by R. J. Wilkinson, C.M.G.</i>	134
A Jelebu Customary Saying <i>by R. O. Winstedt</i>	136
Tokin <i>by R. O. Winstedt</i>	137
Habis, Bukan <i>by R. O. Winstedt</i>	138
Note on Kelantan Rejang <i>by Anker Rentse</i>	139
Two Folktales of Kelantan <i>by Anker Rentse</i>	141
Kelantan Names for Bullocks according to their Colour <i>by</i> <i>Anker Rentse</i>	143
Malay Charms Kelantan <i>by Anker Rentse</i>	146
Review: Matriarchy in the Malay Peninsula (<i>G. A. de C.</i> <i>Moubray</i>) <i>by R. O. Winstedt</i>	158
Notice: Adatrechtbundels	160

The
Malayan Branch
of the
Royal Asiatic Society.

Patron.

H. E. SIR CECIL CLEMENTI, K.C.M.G., Governor of the Straits
Settlements, High Commissioner for the Malay States,
British Agent for Sarawak and North Borneo.

Council for 1931.

THE HON. MR. R. O. WINSTEDT, C.M.G.,			
D.LITT. . . . .	..	..	<i>President.</i>
MR. R. E. HOLTUM . . . . .	..	..	} <i>Vice-Presidents for the S.S.</i>
MR. C. E. WURTZBURG, M.C. . . . .	..	..
DR. A. L. HOOPS . . . . .	..	..
MR. A. CALDECOTT, C.B.E. . . . .	..	..	} <i>Vice-Presidents for the F.M.S.</i>
MR. W. LINEHAN . . . . .	..	..
CAPT. A. C. BAKER, M.C. . . . .	..	..	<i>Vice-President for the U.M.S.</i>
THE HON. MR. M. B. SHELLEY, MESSRS.			} <i>Councillors.</i>
J. D. HALL, W. MARSH, W. G. STIR-			
LING AND THE HON. MR. JUSTICE F.			
G. STEVENS . . . . .	..	..
MR. M. R. HENDERSON . . . . .	..	..	<i>Hon. Treasurer.</i>
MR. F. N. CHASEN . . . . .	..	..	<i>Hon. Secretary.</i>

Proceedings

of the

Annual General Meeting.

The Annual General Meeting of the Society was held at the Raffles Museum, Singapore, at 4.30 p.m. on Monday, 23rd February, 1931.

The President, Mr. C. Boden Kloss, in the chair.

1. The Minutes of the Annual General Meeting held on 17th February, 1930 were read and confirmed.

2. The Annual Report and Accounts as submitted by the Council were adopted.

3. The Officers and Council for 1931 were elected.

A vote of thanks to the chair concluded the meeting.

F. N. CHASEN,
Hon. Secretary.

Annual Report

OF THE

Malayan Branch, Royal Asiatic Society

for 1930.

Membership.

On 31st December the membership roll included 16 Honorary Members, 2 Corresponding Members and 711 Ordinary Members. Forty new members were elected during the year: in 1929 twenty-eight names were added to the list.

The new members are:—

Alston, R. A.	London, G. E.
Ambler, D. B. J.	Luckham, H. A. L.
Berney, H. A.	MacNaught, W. E.
Boulter, R.	Madden, L. J. B.
Clarkson, S. W.	Moysey, Major L. Lewis.
Corbell, H. E.	Murdock, Dr. J. W.
Dale, L. S.	Murphy, H. J.
de Vos, A. E. E.	Rentse, A.
Donlevy, J.	Reynolds, L. N.
Dohoo, K.	Smith, Dr. A. W. H.
Ferguson, N. G.	Soang, A. I. C.
Ford, C. F.	Strahan, A. C.
Gordon, A.	Symington, C. F.
Graham, A. C.	Tivy, L. W.
Heath, R. G.	Trathen, R.
Hogbin, C. J.	Treeby, J. W. C.
Howman, Capt. Ross.	Turner, H. G.
Ince, R. E.	Walters, G. J.
Joseph, J. D.	Watson-Hyatt, R. D.
Le Sueur, R. E.	Weller, H. R.

Under the provisions of Rule 7 two gentlemen were elected Honorary Members of the Society at the Annual General Meeting:—

Sir Hugh Clifford, G.C.M.G., G.B.E.

Sir Josiah Crosby, K.B.E.

Sir Hugh Clifford's record of service to Malaya and the subjects peculiarly the interests of the Society are too well known to need recapitulation.

Sir Josiah Crosby's distinguished services on the Society's behalf when its delegation visited Java in 1929 were largely responsible for the success of the proceedings.

Council.

H. E. Sir Cecil Clementi, K.C.M.G., kindly consented to become Patron of the Society. All the members of the Council elected at the Annual Meeting remained in office for the whole year. For the greater part of the year Mr. E. J. H. Corner kindly deputized for the Hon. Secretary during the absence of the latter on furlough in Europe.

Annual General Meeting.

The Annual General Meeting was held in the Society's Room at the Raffles Museum on 17th February.

Journal.

Two journals were issued during the year and the volume consisted of pp. i-xxxv, 1-363 and plates i-xiii. Although the number of journals issued was less than usual it will be noted that the volume included 363 pages, the first paper published in September being exceptionally large.

Part I was entirely devoted to an annotated translation of Eredia's description of "Malacca, Meridional India and Cathay" by Mr. J. V. Mills, a member of the Malayan Civil Service.

The paper was illustrated by five maps kindly supplied by the Conservator-in-Chief of the Bibliotheque Royale at Brussels.

Agents.

The Council has considered it advisable to change the London Agents of the Society which is now represented by Messrs. Luzac & Co., 46 Great Russell Street, London, W.C. 1.

Finances.

The Council was happy to announce in the Annual Report for 1929 that the Government of the Straits Settlements had promised to continue its financial support by an annual contribution of \$500 for three years starting in 1930 and that the Government of the Federated Malay States had granted \$500 for the year 1930 and had promised to consider the position again at the end of the year.

The Society is now in correspondence with the Government of the Federated Malay States and it is hoped that further support from that quarter will accrue.

In spite of its investments and comparatively large bank balance the financial situation of the Society is not satisfactory.

The investments must be regarded, primarily, as a backing for the large number of Life Members.

The income of the Society from subscriptions and sales of journals has averaged, for the five years 1925-1929, \$3,724. The expenditure on printing for the same period has averaged \$4,213. There is an additional expenditure due to salaries, postages, etc., but printing is of course the chief item. The figures speak for themselves.

At the present output of journals and without Government Grants we should absorb our investments. The balance in the current account of the Society is \$4,400. This seems rather a large amount but it is due to an exceptionally small expenditure on printing in 1930, only a little over \$2,000 having spent before the close of the year as against normally, double that amount.

F. N. CHASEN,

Hon. Secretary.

List of Members for 1931.

(As on 1st January, 1931)

*LIFE MEMBERS.

Patron.

1930. CLEMENTI, H. E. SIR CECIL, K.C.M.G.

Honorary Members.

Year of Election.

- 1903, 1923. ABBOT, DR. W. L., North-east Maryland, U.S.A.
1890, 1918. BLAGDEN, DR. C. O., School of Oriental Studies,
Finsbury Circus, London, England.
1921. BRANDSTETTER, PROF. DR. R., Luzern, Switzerland.
1930. CLIFFORD, SIR HUGH, G.C.M.G., G.B.E., c/o The Crown
Agents, 4, Millbank, London, England. (Patron,
1927).
1930. CROSBY, SIR JOSIAH, K.B.E., c/o H. B. M. Consulate,
Batavia, Java.
1903, 1917. GALLOWAY, SIR D. J., The British Dispensary,
Singapore. (Vice-President, 1906-7: President,
1908-13).
1895, 1920. HANITSCH, DR. R., 99, Woodstock Road, Oxford,
England. (Council, 1897-1919; Hon. Treasurer,
1898-1906, 1910-11, 1914-19; Hon. Secretary,
1912-13).
1922. JOHORE, H. H. THE SULTAN OF, G.C.M.G., K.B.E., Johore
Bahru, Johore.
1903, 1927. MAXWELL, SIR W. G., K.B.E., C.M.G., 123, Oakwood
Court, Kensington, W. 14, London, England.
(Council, 1905, 1915; Vice-President, 1911-12, 1916,
1918, 1920; President, 1919, 1922-3, 1925-6).
1921. PERAK, H. H. THE SULTAN OF, K.C.M.G., K.C.V.O.,
Istana Negara, Bukit Chandan, Kuala Kangsar,
Perak.
1890, 1912. RIDLEY, H. N., C.M.G., F.R.S., 7, Cumberland Road,
Kew Gardens, Surrey, England.
1916. SARAWAK, H. H. THE RAJAH OF, G.C.M.G., Kuching,
Sarawak.
1885. SATOW SIR E. M., Beaumont, Ottery St. Mary,
Devon, England.
1894, 1921. SHELLABEAR, REV. DR. W. G., 20, Whitman Avenue,
West Hartford, Conn., U.S.A. (Council, 1896-1901,
1904; Vice-President, 1913; President, 1914-18).

List of Members

1921. SNOUCK-HURGRONJE, PROF. DR., Leiden, Holland.
 1921. VAN RONKEL, DR. P. H., Zoeterwoudsche Singel 44,
 Leiden, Holland.

Corresponding Members.

1920. LAIDLAW, DR. F. F., Eastfield, Uffculme, Devon.
 England.
 1920. MERRILL, DR. E. D., New York Botanical Garden,
 Bronx Park, New York City, U.S.A.

Ordinary Members.

1921. *ABDUL AZIZ. ENSKU, Johore Bahru.
 1927. ABDUL GHANI BIN MOHAMED, Medical College,
 Singapore.
 1926. ABDUL HAMID BIN DATO KAYA, DATO, Klang,
 Selangor.
 1926. ABDUL HAMID BIN HUSSAIN, District Office, Pasir Mas,
 Kelantan.
 1918. ABDUL MAJID BIN HAJI ZAINUDDIN, HAJI, British
 Legation, Jedda, Hejaz.
 1926. ABDUL MALEK BIN MOHAMED YUSUF, District Office,
 Rasa, Selangor.
 1926. ABDUL MANAF BIN MD. HASSAN, Monopolies and
 Customs, Alor Star, Kedah.
 1926. ABDUL RAHMAN BIN YASSIN, 3, Jalan Chat, Johore
 Bahru, Johore.
 1923. *ABDULLAH BIN JAAFAR DATO, Tarom, Johore Bahru,
 Johore.
 1916. ABRAHAM, H. C., Topographical Department,
 Taiping, Perak.
 1929. ABU BAKAR OF JOHORE. H. H. TENGGU, Johore Bahru,
 Johore.
 1907. *ADAMS, SIR A., K.B.E., Penang. (Vice-President,
 1919).
 1921. ADAMS, C. D., The Residency, Sibn, Sarawak.
 1909. *ADAMS, T. S., Kuala Kangsar, Perak.
 1919. *ADELBORG, F., Pelepah Valley Rubber Estates. Kota
 Tinggi, Johore.
 1927. AHLSTON, A. T., c/o Changkat Tin Dredging Ltd.,
 Batu Gajah, Perak.
 1926. AHMAD BIN MD. ISA, District Office, Sungei Patani,
 Kedah.
 1926. AHMAD BIN OSMAN, District Office, Pekan, Pahang.
 1921. AHMAD JALALUDDIN, Malay College, Kuala Kangsar,
 Perak.
 1922. ALEXANDER, C. S., c/o The Crown Agents. 4,
 Millbank, London, England.
 1927. ALLEN, B. W., Chief Police Office, Kuala Lip's,
 Pahang.
 1914. ALLEN, H. C. W., Boustead & Co., Ltd., Singapore.

1921. ALLEN, HON. MR. L. A., The Residency, Perlis, Kedah.
1927. ALOR STAR GOVERNMENT ENGLISH SCHOOL UNION, Alor Star, Kedah.
1930. ALTSON, R. A., Department of Agriculture, Kuala Lumpur.
1930. AMBLER, D. B. J., Malay College, Kuala Kangsar, Perak.
1926. AMBLER, G., Outram Road School, Singapore.
1929. ANDERSON, D. K., Mercantile Bank, Kuantan, Pahang.
1926. ANDERSON, CAPT. H. A., Commissioner of Police, Kota Bharu, Kelantan.
1921. ANDREINI, CAPT. E. V., Lower Rejang, Sarawak.
1929. ARCHER, J. B., Kuching, Sarawak.
1926. ARIFF, DR. K. M., The New Dispensary, 217, Penang Road, Penang.
1908. ARTHUR, J. S. W., Secretary for Postal Affairs, S.S. and F.M.S., Kuala Lumpur, Selangor.
1926. ATKIN-BERRY, H. C., Swan & McLaren, Singapore.
1926. AUGUSTINE, J. F., Government English School, Alor Star, Kedah.
1908. *AYRE, C. F. C., Ipoh, Perak.
1929. BADDELEY, CAPT. S., c/o Harrison & Crosfields, Sandakan, British North Borneo.
1926. *BAGNALL, HON. MR. J., The Straits Trading Co., Ltd., Singapore.
1919. *BAILEY, A. E., Keecha, Park Road, Leamington Spa, England.
1926. *BAILEY, J., British Vice-Consulate, Nakawn Lampang, Siam.
1915. BAIN, N. K., Kuala Kangsar, Perak.
1926. BAIN, V. L., Forest Department, Bentong, Pahang.
1912. *BAKER, CAPT. A. C., Land Office, Alor Star, Kedah, (Council, 1928).
1899. *BANKS, J. E., The American Bridge Co., Cambridge, Pa., U.S.A.
1920. BARBOUR, DR. T., Museum of Comparative Zoology, Harvard University, Cambridge, Mass., U.S.A.
1928. BARCOCK, F. G., Meranti Lapan Estate, Lahat, Perak.
1926. BARNARD, B. H. F., Southfield, Chitton Polden, Bridgwater, Somerset, England.
1921. BARNES, J. R., 81, East Coast Road, Telok Kurau, Singapore.
1914. BAZELL, C., Malay College, Kuala Kangsar, Perak. (Hon. Librarian. 1916-20; Hon. Treasurer. 1921-22).
1926. BEACH, N. B., Kinta Kellas, Batu Gajah, Perak.
1928. BECKETT, O., Land Office, Malacca.
1925. BEE, R. J., c/o F. M. S. Railways, Kelantan.

1921. BELGRAVE, W. N. C., Department of Agriculture, Kuala Lumpur, Selangor.
1910. *BERKELEY, CAPT. H., I.S.O., Clink Gate, Droitwich, England.
1930. BERNES, H. A., c/o The Chartered Bank, Ipoh, Perak.
1927. BEST, G. A., Botanical Gardens, Singapore.
1912. *BICKNELL, J. W., U. S. Rubber Plantations, Medan, Sumatra.
1884. BICKNELL, W. A., 2, Phillips Avenue, Exmouth, Devon, England.
1924. BIRD, R., Batu Pahat, Johore.
1926. BIRKINSHAW, F., Department of Agriculture, Kuala Lumpur, Selangor.
1908. *BISHOP, MAJOR C. F.
1922. BISHOP, D. A., Raffles Institution, Singapore.
1923. *BLACK, J. G., c/o Colonial Secretariat, Singapore.
1921. BLACK, MAJOR K., General Hospital, Singapore.
1926. BLACKBURN, H. K., Malim Nawar South Ltd., Malim Nawar, Perak.
1923. *BLACKER, DR. G. O., "Sentosa," Brooklands Road Sale, Manchester, England.
1929. BLAGG, F. O., Kuching, Sarawak.
1884. BLAND, R. N., C.M.G., 25, Earl's Court Square, London, S.W.5, England. (Council, 1898-1900; Vice-President, 1907-9).
1921. BLASDELL, REV. R. A., Anglo-Chinese School, Seremban, Negri Sembilan.
1926. BLOOMFIELD, C. W., Education Department, Alor Star, Kedah.
1925. BLYTHE, W. L., Chinese Protectorate, Johore.
1926. *BOSWELL, A. B. S., Forest Department, Taiping, Perak.
1910. BOULT, F. F., The Residency, Kuching, Sarawak.
1930. BOULTER, R., C.M.G., Fullerton Building, Singapore.
1919. *BOURNE, F. G., Coroner's Office, Singapore.
1921. BOYD, R., Co-operative Societies Department, Penang.
1928. BOYD, MR. JUSTICE T. STIRLING, Kuching, Sarawak.
1919. *BOYD, W. R., Colonial Secretariat, Singapore.
1913. BRADDELL, R. ST. J., Braddell Bros., Singapore.
1926. BRETHERTON, E. H. S., c/o Lloyds Bank Ltd., 6, Pall Mall, London, England.
1897. BROCKMAN, SIR E. L., c/o F. M. S. Agency, Cockspur Street, London, England.
1926. BROOKS, A. C., Government Analyst's Office, Singapore.
1915. *BROWN, C. C., Taiping, Perak. (Vice-President, 1925).
1910. BROWN, D. A. M., Glugor, Penang.
1913. *BRYAN, J. M., Borneo Co., Ltd., 28, Fenchurch Street, London, England.

1887. BRYANT, A. T., The Moorings, Falmouth, Cornwall, England. (Council, 1907-10; Vice-President, 1912, 1914-16).
1926. BUCKLE, Miss D. M., O.B.E., Raffles Girls School, Singapore.
1926. *BURTON, W., Judge's Chambers, Ipoh, Perak.
1921. BUTTERFIELD, H. M., Alor Star, Kedah.
1913. *CALDECOTT, A., C.B.E., Post Office, Kuala Lumpur, Selangor.
1925. CALLENFELS, DR. P. VAN STEIN, Madiun, Ponorogo, Java.
1926. CARDON, REV. FR. R., Taiping, Perak.
1926. CARDWELL, H. F., Tangkah Estate, Tangkah, Johore.
1925. CAREY, H. R., Francis Light School, Penang.
1924. CARR, C. E., Tembeling, Pahang.
1927. CARROLL, A. F., Forest Office, Kuala Lipis, Pahang.
1921. *CAVENDISH, A., Kuala Lumpur, Selangor.
1926. CHAN SZE ONN, 64, Market Street, Singapore.
1926. CHARTER, J. R. N., Forest House, Seremban, Negri Sembilan.
1921. CHASEN, F. N., Raffles Museum, Singapore. (Council, 1925; Hon. Secretary, 1927-).
1924. *CHEESEMAM, H. R., Education Department, Johore Bahru, Johore.
1926. CHELLIAH, D. D., Anglo Chinese School, Penang.
1913. *CHOO KIA PENG, Kuala Lumpur, Selangor.
1913. CHULAN, HON. RAJA DE HILIR, C.M.G., Kuala Kangsar, Perak.
1927. CLARK, B. F., c/o Adamson Gilfillan & Co., Pontianak, W. Borneo.
1921. CLARK, H. T., Education Office, Singapore.
1926. *CLARKE, G. C., "Tilton," 14, Gallop Road, Singapore.
1929. CLARKE, W. L., Sibul, Sarawak.
1930. CLARKSON, S. W., Sanglop Estate, Batu Gajah, Perak.
1921. CLAYTON, G. E., c/o Supreme Court, Singapore.
1926. CLAYTON, R. J. B.
1911. *CLAYTON, T. W., Alor Star, Kedah.
1925. CLEGG, R. P., Kuala Selangor.
1917. CLIFFORD, G. F. W., Lawas (Sarawak) Rubber Estates. Ltd., Lawas, Labuan.
1929. COBDEN-RAMSAY, A. B., Secretariat, Penang.
1922. COCHRANE, HON. MR. C. W. H., C.M.G., Federal Secretariat, Kuala Lumpur, Selangor.
1922. COE, CAPT. T. P., Kota Bharu, Kelantan.
1926. COLEMAN, C. G., High School, Malacca.
1920. *COLLENETTE, C. L., Gothic Lodge, Woodford Green, Essex, England. (Council, 1922).
1926. COLLINS, G. E. P., Killaloe, Wroxham, Norwich, England.

1928. COLOMBE, R. E., Forest Department, Telok Anson, Perak.
1926. COMMANDANT, THE, Police Depot, Kuala Lumpur, Selangor.
1926. CONSERVATOR OF FORESTS, F.M.S. and S.S., Kuala Lumpur, Selangor.
1926. COOPE, A. E., Federal Secretariat, Kuala Lumpur, Selangor.
1928. COOPER, B., Survey Department, Batu Gajah, Perak.
1927. COOPER, C. B., Jalan Ah Fook, Johore Bahru, Johore.
1926. COOPER, R. H., The Eastern Smelting Co., Kuala Lumpur, Selangor.
1930. CORBELL, H. E., Eastern Smelting Co., Taiping, Perak.
1929. CORNER, E. J. H., Botanical Gardens, Singapore.
1925. CORRY, W. C. S., Asst. Collector Land Revenue, Kuala Lumpur, Selangor.
1926. COSGRAVE, DR. A. K., Kuala Lumpur, Selangor.
1921. COULSON, N., Kota Bharu, Kelantan.
1921. COWAP, J. C., Government Analyst's Office, Singapore.
1923. *COWGILL, J. V., Land Office, Kuala Lumpur, Selangor.
1921. CRANNA, GORDON, Young Men's Christian Association, Orchard Road, Singapore.
1921. *CULLEN, W. G., Bartolome Mitre 559, Buenos Aires, South America.
1925. CULLIN, E. G., 54, Assam Kumbang Road, Taiping, Perak.
1927. CUMMING, C. E., Floral Villa, Ipoh, Perak.
1928. CUNNINGHAM, F., Port Dickson, Negri Sembilan.
1923. CURTIS, R. J. F., 333, Thomson Road, Singapore.
1930. DALE, L. S., c/o E. A. Barbour, Ltd., Taiping, Perak.
1929. DALLEY, J. D., Chief Police Office, Johore Bahru, Johore.
1922. DALTON, H. G., "Ivy Court," Royston, Herts, England.
1923. DALTON, N. D., Gadek Estate, Tampin, F.M.S.
1910. *DALY, M. D., Cleve Hill, Cork, Irish Free State.
1918. *DAVIE, P. A. F., c/o The Crown Agents, 4, Millbank, London, England.
1926. DAVIDSON, J., c/o Caldbeck Macgregor & Co., Kuala Lumpur, Selangor.
1928. DAVIDSON, W. W., c/o Public Works Department, Batu Pahat, Johore.
1925. DAVIES, D. J., Sungei Purun Estate, Semenyih, Selangor.
1927. DAVIES, E. R., Malay College, Kuala Kangsar, Perak.
1927. *DAWSON, C. W., Colonial Secretariat, Singapore.
1928. DAWSON, W., S. S. Police, Penang.
1923. DAY, E. V. G., Ag. Asst. Adviser, Besut, Trengganu.
1926. DEL TUFO, M. V., Labour Office, Penang.

1922. DENNY, A., Sungei Pe'ek Estate, Sepang, Selangor.
 1930. DE VOS, A. E. E., Taiping, Perak.
 1929. DICKINSON, MRS. W. J., Bandoeng, Java.
 1897. DICKSON, E. A., c/o Mrs. Fostet, The Hermitage,
 Twyford, Hants, England.
 1921. *DICKSON, REV. P. L., Long Marston Vicarage, Tring,
 Herts, England.
 1927. DODD, G. C., District Court, Singapore.
 1930. DOHOO, K. G. A., Colonial Secretariat, Singapore.
 1926. *DOLMAN, H. C., Forest Office, Kuala Kangsar, Perak.
 1930. DONLEVY, J., c/o S. Way Dredging, S. Way, Selangor.
 1923. *DOSCAS, A. E. Coleman, Department of Agriculture,
 Kuala Lumpur, Selangor.
 1922. DRURY, CAPT. F., Bukit Zahara School, Johore Bahru,
 Johore.
 1921. DRYBURGH, A. M., Colonial Secretariat, Singapore.
 1926. DUFF, DR. W. R., 5, Wardie Road, Edinburgh,
 Scotland.
 1915. *DUSSEK, O. T., Sultan Idris Training College, Tanjong
 Malim, Perak.
 1922. EBDEN, W. S., Grik, Upper Perak.
 1922. ECKHARDT, H. C., Alor Star, Kedah.
 1922. EDGAR, A. T., Suffolk Estate, Sitiawan, Perak.
 1929. EDMETT, L. R. J., Kuching, Sarawak.
 1927. EDUCATION DEPARTMENT, Alor Star, Kedah.
 1926. EDWARDES, MAJOR W. A. D., Baling, Kedah.
 1885. EGERTON, SIR WALTER, Fair Meadow, Mayfair,
 Sussex, England.
 1929. EHLERS, R. H., 28, Hurle Crescent, Clifton, Bristol,
 England.
 1921. ELDER, DR. E. A., The British Dispensary, Singapore.
 1922. ELLES, HON. MR. B. W., The Residency, Alor Star,
 Kedah.
 1918. ELLIOTT, F. L., Treskelly, Marnhull, Sturminster
 Newton, Dorset, England.
 1926. ENSOR, T. D., c/o Messrs. Neill & Bell, 1, Old
 Market Square, Kuala Lumpur, Selangor.
 1913. ERMEN, C., c/o Lloyds Bank, Brixham, South Devon,
 England.
 1923. *EU TONG SEN, HON. MR., O.B.E., Sophia Road,
 Singapore.
 1924. EVANS, I. H. N., The Museum, Taiping, Perak.
 (Vice-President, 1926-7; 1928-30).
 1925. FAIRBURN, HON. MR. H., Stevens Road, Singapore.
 1927. FARRELLY, G. A., Jesselton, British North Borneo.
 1909. FARRER, R. J., C.M.G., Municipal Offices, Singapore.
 (Council, 1925-7).
 1929. FENWICK, C., c/o The Borneo Co., Kuching,
 Sarawak. (Council, 1912-13).
 1930. FERGUSON, N. G., Kuala Krai, Kelantan.
 1911. *FERGUSON-DAVIE, RT. REV. C. J.

1909. FERRIER, J. C., 28, Fenchurch Street, London, England.
1928. FINDLAY, C. S., Supreme Court, Singapore.
1917. FINLAYSON, DR. G. A., "Changi," West Moors, Dorset, England.
1919. *FINNIE, W., 73, Forest Road, Aberdeen, Scotland.
1925. FITZGERALD, DR. R. D., Johore Bahru.
1926. FLIPPANCE, F., Botanical Gardens, Penang.
1897. *FLOWER, MAJOR S. S., Spencersgreen, Tring, Herts, England.
1928. FOENANDER, E. C., Forest Office, Mentakab, Pahang.
1930. FORD, C. F., North Malay Rubber Estates, Ltd., Ulu Sapetang P. O., Perak.
1926. FORD, P. B., 60, Klyne Street, Kuala Lumpur, Selangor.
1923. FOREST BOTANIST, THE, Forest Research Institute, Dehra Dun, U. P. India.
1921. FORRER, H. A., District Court, Kuala Lumpur, Selangor.
1918. *FOXWORTHY, DR. F. W., Forest Department, Kuala Lumpur, Selangor. (Council, 1923, 1926-7).
1921. *FRASER, F. W., The Badminton Club, Piccadilly, London, W. 1, England.
1908. *FREEMAN, D., 16, St. Catherine's Road, Southbourne, Bournemouth, Hants, England.
1926. FRODA, A. H., Ipoh Club, Ipoh, Perak.
1910. *FROST, MEADOWS, Dernford Hall, Sweffling, nr. Saxmundham, Suffolk, England.
1912. *GALLAGHER, W. J., U. S. Plantations Inc., Medan, Sumatra.
1917. *GARNIER, REV. KEPPEL, Penang.
1923. GATER, B. A. R., College of Medicine, Singapore.
1926. GATFIELD, W. H., Chinese Protectorate, Singapore.
1928. GEAKE, F. H., c/o The Government Analyst, Singapore.
1920. GEALE, DR. W. J., Kuala Krai, Kelantan.
1926. *GEORGE, J. R., The Chartered Bank, Singapore.
1917. *GERINI, LT. COL. G. C.
1928. GILLETT, PROF. E. W., Raffles College, Cluny Road, Singapore.
1923. GILMOUR, A., District Office, Kuala Krai, Kelantan.
1902. *GIMLETTE, DR. J. D., Hillside, Upper Weston, Bath, Somerset, England.
1922. *GLASS, DR. G. S., Municipal Offices, Penang.
1928. GLOVER, A. H., Municipal Offices, Malacca.
1918. GLOYNE, G. B., c/o Messrs. Burt Myrtle & Co., Batavia, Java.
1916. GOODMAN, HON. MR. A. M., Chinese Secretariat, Singapore.
1930. GORDON, A., Municipal Offices, Singapore.
1922. GORDON, T. I. M., c/o General Post Office, Singapore.

- 1920. GORDON-HALL, CAPT. W. A., District Office, Kuala Pilah, Negri Sembilan.
- 1926. GOSS, P. H., Survey Department, Malacca.
- 1909. GOULDING, R. R., Survey Department, Johore Bahru, Johore.
- 1929. GRACIE, A. J., Kuala Trengganu, Trengganu.
- 1930. GRAHAM, A. C., c/o Perak Club, Taiping, Perak.
- 1927. GRAHAM, H. GORDON, Sungei Kruit Estate, Sungkai, Perak.
- 1924. GRAHAM, W. H., Malacca.
- 1929. GRAY, G. L., Sandakan, British North Borneo.
- 1928. GREAD, R. E., Sitiawan, Lower Perak.
- 1923. GREEN, DR. P. WITNERS, Johore Bahru, Johore.
- 1926. GREENE, R. T. B., Institute for Medical Research, Kuala Lumpur, Selangor.
- 1929. GREGG, J. F. F., c/o Secretariat, Singapore.
- 1928. GREGSON, CAPT. H. ST. JOHN-RUSSEL-DE LYS, Chartered Bank, Singapore.
- 1926. GRICE, N., Chinese Protectorate, Johore Bahru, Johore.
- 1923. GRIEVE, C. J. K., Post Box No. 58, Klang, Selangor.
- 1911. GRIST, D. H., Department of Agriculture, Kuala Lumpur, Selangor.
- 1922. GUBBINS, W. H. W., c/o Mansergh & Taylor, Seremban, Negri Sembilan.
- 1926. GUMMER, W. A., Survey Department, Kulim, Kedah.
- 1925. GUNN, R. F., Education Department, Penang.
- 1916. GUPTA, SHIVA PRASAD, Naudansahu Street, Benares City, India.
- 1923. *HACKER, DR. H. P., Zoological Department, University College, London, W.C. 1, England.
- 1923. HAINES, MAJOR O. B., S. O. S. Estate, Selama, Perak.
- 1923. HAKE, H. EGMONT, Barker & Co., Ltd., Kuala Lumpur, Selangor.
- 1923. HALFORD, SIDNEY, Construction Department, F.M.S. Railways, Kuala Lumpur, Selangor.
- 1927. HALL, A. S., c/o Gammon & Hall, Ltd., Taiping, Perak.
- 1914. HALL, J. D., Colonial Secretariat, Singapore. (Council, 1924, 1926-8; 1930-).
- 1911. *HALLIFAX, F. J., Oakwood, Brampton, Cumberland, England.
- 1915. HAMILTON, A. W., c/o Police Office, Singapore. (Vice-President, 1922, 1925, 1929-30).
- 1918. HAMPSHIRE, A. K. E., Kuala Lumpur, Selangor.
- 1922. HAMPSHIRE, D.H., c/o Boustead & Co., Ltd., Kuala Lumpur, Selangor.
- 1924. HAMZAH BIN ABDULLAH, Land Office, Kuala Lumpur, Selangor.
- 1923. HANCOCK, A. T., 22-2, Tanglin Road, Singapore.
- 1922. HANITSCH, P. H. V., Public Works Dept., Alor Star, Kedah.

1922. HARROWER, PROF. G., Medical College, Singapore.
1921. HART, DR. H. H., 328, Post Street, San Francisco, U.S.A.
1921. HASHIM, CAPT. N. M., Parit Buntar, Perak.
1926. *HASTINGS, W. G. W., 56, Klyne Street, Kuala Lumpur, Selangor.
1921. HAWKINS, G., The Secretariat, Kuala Lipis, Pahang.
1925. HAY, A. W., Chinese Protectorate, Singapore.
1919. HAY, M. C., Kemaman, Trengganu.
1921. HAYES, L. J., Fraser & Co., Singapore.
1904. *HAYNES, A. S., Federal Secretariat, Kuala Lumpur, Selangor. (Council, 1920).
1928. HEAH JOO SEANG, c/o Hin Giap Co., 195, Victoria Street, Penang.
1930. HEATH, R. G., Agricultural Department, Kuala Lumpur, Selangor.
1922. HELLINGS, G. S., Estate Duty Officer, Kuala Lumpur, Selangor.
1926. HELPS, A., Alor Star Kedah c/o S.
1923. HEMMANT, G., C.M.G., c/o Secretariat, Nigeria.
1926. HENDERSON, CAPT. A. M., Sandala Estate, Sandakan, British North Borneo.
1921. HENDERSON, M. R., Botanical Gardens, Singapore. (Council, 1928; Hon. Treasurer, 1928-).
1917. HEREFORD, G. A., 20, Circular Road, Kuala Lumpur, Selangor.
1927. HEROD, E. J., c/o The Hongkong & Shanghai Bank, Singapore.
1926. HERON, F. R., Singapore Cold Storage Co., Singapore.
1929. HERRING MRS. J. M., c/o The Manager, Scarboro Estate, Sungei Patani, Kedah.
1923. *HICKS, E. C., Education Department, Alor Star, Kedah.
1878. HILL, E. C., 26, Highfield Hill, Upper Norwood, London, England.
1922. HILL, W. C., Singapore Oil Mills, Ltd., Havelock Road, Singapore.
1922. HINDE, C. T., Mersing, Johore.
1927. HIS MAJESTY'S STATIONERY OFFICE, Princes Street, Westminster, S.W.1, London, England.
1923. *HODGSON, D. H., Forest Department, Kuala Lumpur, Selangor.
1930. HOGBIN, C. J., Valleyside Estate, P. O. Batang Malaka, Malacca.
1921. HOLGATE, M. R., c/o Education Department, Malacca.
1926. HOLL, E. S., Kuching, Sarawak.
1923. HOLLAND, A. D., Kapoewas Rubber Co., Ltd., Sungei Dekan, Pontianak, Borneo.

1922. HOLTUM, R. E., Botanical Gardens, Singapore (Hon. Treasurer, 1923-6, 1928; Vice-President, 1929-).
1921. HOOPS, DR. A. L., Malacca. (Vice-President, 1930-).
1897. HOSE, E. S., C.M.G., The Manor House, Normandy, Guildford, England. (Vice-President, 1923, 1925; President, 1924).
1926. HOWITT, C. R., c/o Secretariat, Singapore.
1923. HOWL, CAPT. F. W., c/o Federal Secretariat, Kuala Lumpur, Selangor.
1930. HOWMAN, CAPT. ROSS, 1/20th Burma Rifles, Taiping, Perak.
1909. HUBBACK, T. R., Sunlaws, Bukit Betong, Kuala Lipis, Pahang.
1922. HUGGINS, CAPT. J., c/o Federal Secretariat, Kuala Lumpur, Selangor.
1909. HUGHES, J. W. W., District Office, Klang, Selangor.
1929. HUMPHREYS, A., Kuching, Sarawak.
1922. HUNT, CAPT. H. NORTH, District Office, Kuala Lipis, Pahang.
1921. HUNTER, DR. P. S., Municipal Offices, Singapore.
1929. HUTCHINSON, DR. H., Kuching, Sarawak.
1926. *INCE, H. M., Langkon, British North Borneo.
1930. INCE, R. E., King Edward VII School, Taiping, Perak.
1929. INGLE, D., Kota Belud, via Jesselton, British North Borneo.
1922. IRVINE, CAPT. R., Tampin, Negri Sembilan.
1921. ISMAIL BIN BACHOK, DATO, Johore Bahru, Johore.
1926. ISMAIL BIN HAJI PUTEH, District Office, Baling, Kedah.
1921. *IVERY, F. E., Alor Star, Kedah.
1926. JACKSON, A., Mansfield & Co., Ltd., Singapore.
1925. JACQUES, E. V. H., Kuching, Sarawak.
1918. *JAMES, D., Goebilt, Sarawak.
1927. JAMIESON, M., c/o Government Analyst, Singapore.
1926. JEFFERSON, J. P., Miri, Sarawak.
1926. JEFFERSON, J. W., Education Office, Clark Street, Kuala Lumpur, Selangor.
1921. *JERMYN, L. A. S., c/o Education Office, Singapore.
1926. JERVOISE, R. S., Krian, Perak.
1910. JOHNSON, B. G. H., Crossways, Littlehampton, Sussex, England.
1925. JONES, A. E. THORNLEY, Mansfield & Co., Ltd., Singapore.
1918. *JONES, E. P.,
1913. *JONES, S. W., Johore Bahru, Johore.
1919. *JORDAN, A. B., Sanitary Board, Ipoh, Perak.
1930. JOSEPH, J. D., King Edward VII School, Taiping, Perak.

1926. KAHAR BIN YAMTUAN ANTAH, TENGKU, Kuala Pilah, Negri Sembilan.
1926. KASSIM BIN CHE ISMAIL, State Council Office, Alor Star, Kedah.
1921. KASSIM BIN SULTAN ABDUL HAMID HALIMSHAH, TENGKU, Alor Star, Kedah.
1921. *KAY-MOUAT, DR. J. R., Medical College, Singapore.
1926. KEIR, A., Education Office, Taiping, Perak.
1926. KEITH, H. G., Forest Department, Sandakan, British North Borneo.
1921. *KELLIE, J., Dunbar Estate, Neram Tunggal, P. O. Chegar Perah, Pahang.
1913. KEMPE, J. E., Klang, Selangor.
1920. *KER, W. P. W., Paterson, Simons & Co., Ltd., Singapore.
1920. *KERR, DR. A., Wireless Road, Bangkok, Siam.
1926. KHOO SIAN EWE, 24, Light Street, Penang.
1921. KIDD, G. M., District Office, Tampin, F.M.S.
1920. KING, E. M., Kong Lee (Perak) Plants., Ltd., Bagan Serai, Perak.
1927. KING, S. E., Chinese Protectorate, Singapore.
1926. KINGSBURY, DR. A. N., Medical Institute, Kuala Lumpur, Selangor.
1921. KITCHING, T., Superintendent of Surveys, Trengganu.
1900. KLOSS, C. BODEN, Raffles Museum, Singapore. (Council, 1904-8, 1923, 1927-8; Vice-President, 1920-1, 1927; Hon. Secretary, 1923-6; President, 1930).
1915. KNIGHT, V., Fairgreen Cottage, Glemsford, Suffolk, England.
1914. LAMBOURNE, J., Agricultural Department, Kuala Lumpur, Selangor.
1926. LAMIN BIN KASSIM, Police District, Lahat, Perak.
1929. LANGLADE, BARON FRANCOIS DE, Budu Estate, Raub, Pahang.
1927. LAYCOCK, J., c/o. Braddell Bros., Raffles Place, Singapore.
1926. LAYMAN, E. C. H., Section Engineers Office, F. M. S. Railways, Kuala Gris, Kelantan.
1923. *LEASE, F. E., The Shanty, Chislehurst Hill, Chislehurst, Kent, England.
1921. *LEE, L. G., Ladang Geddes, Bahau, Negri Sembilan.
1922. *LEGGATE, J., Railway Construction, Kuala Lumpur, Selangor.
1913. *LEICESTER, DR. W. S., Kuantan, Pahang.
1894. *LEMON, A. H., C.M.G., Hillbrow, Reigate, Surrey, England. (Vice-President, 1916-18).
1920. LENDRICK, J., 30, Norre Alle, Aarhus, Denmark.
1926. LEONARD, H. G. R., THE HON. MR., Treasury, Kuala Lumpur, Selangor.
1925. *LEONARD, R. W. F., Mansfield & Co., Ltd., Penang.

- 1926. LEUTHOLD, W. H., Hooglandt & Co., Singapore.
- 1890. LEWIS, J. E. A., Harada 698, Kobe, Japan.
- 1928. LEWIS, T. P. M., Maxwell Road, Ipoh, Perak.
- 1927. LEYH, S. G. H., Government Monopolies, Penang.
- 1922. LEYNE, E. G., c/o The Chartered Bank of India, 38, Bishopsgate, London, England.
- 1915. LIM CHENG LAW, 294, Brick Kiln Road, Penang.
- 1925. LINEHAN, W., Asst. Adviser, Kota Bharu, Kelantan.
- 1928. LOCH, C. W., Tronoh Mines, Ltd., Kampar, Perak.
- 1926. LOGAN, S. S., Chartered Bank, Klang, Selangor.
- 1918. LOH KONG IMM, 12, K'ia Peng Road, Kuala Lumpur, Selangor.
- 1930. LONDON, G. E., Johore Bahru, Johore.
- 1914. LORNIE, HON. MR. J., C.M.G., The Residency, Kuala Lumpur, Selangor.
- 1922. LOWINGER, V. A., Survey Department, Kuala Lumpur, Selangor.
- 1930. LUCKHAM, H. A. L., District Office, Telok Anson, Perak.
- 1907. *LYONS, Rev. E. S., c/o Methodist Publishing House, Manila, Philippine Islands.
- 1926. MACASKILL, DR. D. C., Kuala Lumpur, Selangor.
- 1920. *MACBRYAN, G. T. M., Bedil House, Kuching Sarawak.
- 1926. MACDONALD, J., Chartered Bank, Kuala Lumpur, Selangor.
- 1929. MACE, N., Survey Department, Kuching, Sarawak.
- 1910. *MACFADYEN, E., c/o Sports Club, London, England.
- 1929. MACGREGOR, R. O. C. R., Sentool Estate, Djember, East Java.
- 1920. MACKIE, VIVIAN, Kuala Lumpur, Selangor.
- 1922. MACKNESS, L. R., Kuala Lumpur, Selangor.
- 1921. MACMILLAN, I. C., S. S. Police, Singapore.
- 1930. MACNAUGHT, W. E., Game Warden's Office, Taiping, Perak.
- 1930. MADDEN, L. J. B., Taiping, Perak.
- 1918. MADGE, RAYMOND, Kuala Lumpur, Selangor.
- 1929. MAHMUD BIN JINTAN, Malay College, Kuala Kangsar, Perak.
- 1924. MAHMUD BIN MAT, District Office, Kuala Lipis, Pahang.
- 1903. MAKEPEACE, W., 22, Holmes Grove, Henleaze, Bristol, England. (Council. 1914, 1916, 1920; Hon. Librarian, 1909-12; Vice-President, 1917; Hon. Secretary, 1918-19).
- 1928. MALACCA LIBRARY, The, Malacca.
- 1926. MALAY COLLEGE, The, Kuala Kangsar, Perak.
- 1927. MALLESON, B. K., Sungei Kruit Estate, Sungkai, Perak.
- 1921. MANCHESTER, H. L., Municipal Offices, Singapore.
- 1916. MANN, W. E., c/o Burt Myrtle & Co., Batavia, Java.
- 1929. MARJORIBANKS, DR. E. M., Kuching, Sarawak.

- 1907. *MARRINER, J. T., Pantiles, Frinton, Essex, England.
- 1926. MARSDEN, H., Institute for Medical Research, Kuala Lumpur, Selangor.
- 1920. MARSH, W., Municipal Offices, Singapore. (Council. 1929).
- 1927. MARSHALL, A. O., Borneo Motors, Ltd., Kuala Lumpur, Selangor.
- 1925. *MARTIN, W. M. E., 12, Norham Road, Oxford, England.
- 1923. MARTYN, C. D., Jesselton, British North Borneo.
- 1921. MATHER, N. F. H., Federal Secretariat, Kuala Lumpur, Selangor.
- 1926. MATTHEWS, J. J., Krubong Estate, Alor Gajah, P. O., Malacca.
- 1921. MAXWELL, C. N., Sitiawan, Perak.
- 1922. MAY, P. W., c/o Spicers Export, Ltd., 51, Robinson Road, Singapore.
- 1914. MEAD, J. P., Batu Gajah, Perak.
- 1928. MEE, B. S., Forest Department, Kuala Lumpur, Selangor.
- 1927. MEGAT YUNUS BIN ISA, Land Office, Telok Anson, Perak.
- 1928. MEYER, L. D., Revenue Surveys, Taiping, Perak.
- 1926. MIDDLEBROOK, S. M., Chinese Protectorate, Singapore.
- 1926. *MILES, HON. MR. C. V., Rodyk & Davidson, Singapore.
- 1926. MILLAR, G. R. M., Tranquerah, Malacca.
- 1925. MILLER, G. S., Mansfield & Co. Ltd., Penang.
- 1921. MILLER, J. I., Registrar General of Statistics, Singapore.
- 1926. MILLINGTON, W. M., The Residency, Kuala Trengganu, Trengganu.
- 1925. MILLS, G. R., Kinta Kellas Estate, Batu Gajah, Perak.
- 1926. MILLS, J. V., Solicitor General's Chambers, Singapore. (Council. 1929—30).
- 1924. MILLS, L. L., Kuala Lipis, Pahang.
- 1925. MILNE, CHARLES, Lendu Estate, Alor Gajah, Malacca.
- 1919. MISSIONARY RESEARCH LIBRARY, 3041, Broadway, New York City, New York, U.S.A.
- 1924. MOHAMED IBNI SULTAN ABDUL HAMID HALIMSHAH, Tengku, Alor Star, Kedah.
- 1922. MOHAMED ISMAIL MERICAN BIN VAFOO MERICAN NOORDIN, Legal Adviser's Office, Alor Star, Kedah.
- 1927. MOHAMED NOOR BIN MOHAMED, Free School, Penang.
- 1922. MOHAMED SAID, MAJOR DATO HAJI, Bukit Timbalan, Johore.
- 1921. MOHAMED SALLEH BIN ALI, DATO, Johore Bahru, Johore.
- 1921. MOHAMED SHERIFF BIN OSMAN, Land Office, Alor Star, Kedah.
- 1920. MONK, H. T., Alor Star, Kedah.

1926. MONTGOMERY, A., Kota Bharu, Kelantan.
1926. MOONSHI, DR. H. S., Moonshi Dispensary, 742, North Bridge Road, Singapore.
1921. MORGAN, S., c/o The Chartered Bank of India, 38, Bishopsgate, London, England.
1926. *MORICE, JAMES.
1920. *MORKILL, A. G.
1920. *MOWBRAY, G. A. de C., Commissioner of Land, Trengganu.
1930. MOYSEY, MAJOR L. LEWIS, Gopeng Consolidated Ltd., Gopeng, Perak.
1926. MUMFORD, E. W., Police Department, Ipoh, Perak.
1915. *MUNDELL, H. D., c/o Sisson & Delay, Singapore.
1930. MURDOCH, DR. J. W., Mental Hospital, Tanjong Rambutan, Perak.
1930. MURPHY, H. J., c/o District Office, Temerloh, Pahang.
1913. MURRAY, REV. W., Gilstead Road, Singapore.
1909. McARTHUR, M. S. H., c/o The Crown Agents, 4, Millbank, London, England.
1920. McCABE, DR. J. B., Kapoewas Rubber Estate, Sungei Dekan, Pontianak, Borneo.
1923. McKERRON, P. A. B., Brunei, Borneo.
1921. McLEOD, D., King Edward VII School, Taiping, Perak.
1917. NAGLE, Rev. J. S., 2732, N. Calvert Street, Baltimore, Md., U.S.A.
1922. NASH, G. H., Magistrate's Court, Kuala Lumpur, Selangor.
1926. NEAVE, J. R., Assistant Adviser, Kota Tinggi, Johore.
1926. NEIL, W. H. E., Kuala Lipis, Pahang.
1921. NEILSON, J. B., Inspector of Schools, Malacca.
1928. NOBLE, C., Assistant Superintendent of Surveys, Trengganu.
1906. NUNN, B., Galphay Manor, Ripon, England. (Council, 1922).
1911. O'May, J., c/o Harrisons & Crosfield Ltd., 1-4, Great Tower Street, London, England.
1916. ONG BOON TAT, 51, Robinson Road, Singapore.
1923. OPIE, R. S., 12, Treacher Road, Kuala Lumpur, Selangor.
1921. ORCHARD, H. A. L., Chinese Free School, Cecil Street, Singapore.
1920. O'SULLIVAN, T. A., Education Office, Kuala Lumpur, Selangor.
1913. OVERBECK, H., c/o Behn Meyer & Co., Ltd., Sourabaya, Java.
1925. OWEN, A. T., Bukit Batu Estate, Tampin, Negri Sembilan.
1929. PAGDEN, H. T., Agricultural Department, Kuala Lumpur, Selangor.
1919. PARK, MUNGO, P. O. Delivery 19, Kuala Lumpur, Selangor.

1908. *PARR, C. W. C., C.M.G., O.B.E., Parrisees Hayne, Howley, nr. Chard, Somerset, England. (Vice-President, 1919).
1926. PARRY, B. B., Cia Mexicana Petroleo "El Aguila" S.A., Puerto Mexico, Mexico.
1921. *PATERSON, MAJOR H. S., c/o The Crown Agents, 4, Millbank, London, England.
1926. PEALL, G. T., c/o The District Court, Singapore.
1928. PEASE, R. L., Tarsus Estate, Port Dickson, Negri Sembilan.
1921. PEDLOW, J., Deputy Public Prosecutor's Office, Singapore.
1922. PEEL, H. E. SIR W., C.M.G., Government House, Hongkong.
1928. PENANG FREE SCHOOL, Green Lane, Penang.
1926. PENANG LIBRARY, Penang.
1921. *PENDLEBURY, H. M., Selangor Museum, Kuala Lumpur, Selangor.
1926. *PENGILLEY, E. E., District Office, Pasir Puteh, Kelantan.
1924. PENNEFATHER-EVANS, J.P., F.M.S. Police, Kuala Lumpur, Selangor.
1925. *PENRICE, W., Mansfield & Co., Ltd., Singapore.
1914. PEPYS, W. E., c/o Federal Secretariat, Kuala Lumpur, Selangor.
1920. PESKETT, A. D., African Direct Telegraph Co., Free Town, Sierre Leone.
1920. PETERS, E. V., c/o Yukon Gold, Ampang, Selangor.
1929. PHILLIPS, W. J., c/o The District Office, Sandakan, British North Borneo.
1925. PIJPER, DR. G. F., Weltevreden, Java.
1927. PITT, ISAAC, Bried Estate, Bagan Serai, Perak.
1921. *PLUMMER, W. P., The Observatory, Bidston, Birkenhead, England.
1928. POWELL, I. B., Llanfihangel, Talylllyn, Breconshire, Wales.
1924. PURCELL, V. W. W. S., Chinese Protectorate, Singapore.
1926. PURDOM, MISS N., Education Office, Kuala Lumpur, Selangor.
1906. PYKETT, REV. G. F., 5, Logan Road, Penang.
1926. QUAH BENG KEE, 15, China Street, Penang.
1926. RAE, CECIL, Ipoh, Perak.
1924. RAJA MUDA of Perak, Telok Anson, Perak.
1929. RAJA RAZMAN BIN RAJA ABDUL HAMID, Kuala Kangsar, Perak.
1926. RAJA YA'ACOB BIN JAAFAR, Kinta Sanitary Board, Ipoh, Perak.
1924. RAMBAUT, A. E., Forest Department, Kuala Lumpur, Selangor.
1924. RASMUSSEN, H. C., c/o East Asiatic Co., Singapore.
1917. RATTRAY, DR. M. J., c/o Europe Hotel, Singapore.

1916. RAYMAN, L., Kuala Trengganu, Trengganu.
1926. *REAY, MR. JUSTICE J. McCABE, 29, Crystal Palace Park Road, Sydenham, S.E. 26, England.
1924. REED, J. G., Klang, Selangor.
1910. *REID, DR. ALFRED, Kuala Lumpur, Selangor.
1926. RENNIE, A. A., Kuching, Sarawak.
1930. RENTSE, A., Kuala Hau Estate, Kelantan.
1921. *REX, MARCUS, Kuala Lumpur, Selangor.
1930. REYNOLDS, L. N., Kuching, Sarawak.
1915. RICHARDS, H. E. MR. A. F., Government House, Jesselton, British North Borneo. (Council, 1923, 1926—7, 1929).
1929. RICHARDS, D., c/o The Sanitary Board, Taiping, Perak.
1926. *RIGBY, W. E., c/o The Chartered Bank, Singapore.
1929. ROBERTS, C. W., Lumut, The Dindings.
1912. ROBERTSON, J., c/o W. H. Rose, Esq., Burgh House, Burgh, Woodbridge, Suffolk, England.
1926. ROBINSON, F., Alor Star, Kedah.
1911. *ROBINSON, H., 55, St. George's Square, London, S.W.1, England. (Council, 1916-20; Vice-President, 1922-3).
1926. ROBINSON, P. M., c/o The Eastern Smelting Co., Ltd., Penang.
1928. ROCHE, F. R., Rubber Estates of Krian, Ltd., Bagan Samak, Kedah.
1916. ROGERS, A., Public Works Department, Singapore.
1921. ROSS, E. A., Singapore.
1917. *ROWLAND, W. R., Schloss Kalling, Post Moosen a.d. Bills, Oberbayern, Germany.
1922. RUSSELL, D. J. A., Kuala Lumpur, Selangor.
1924. SAMAH BIN HAJI ALI, Pekan, Pahang.
1926. SANGER-DAVIES, A. E., Forest Office, Taiping, Perak.
1923. *SANSOM, C. H., Police Headquarters, Kuala Lumpur, Selangor.
1919. *SANTRY, D., c/o Swan & Maclaren, Singapore.
1896. *SAUNDERS, C. J., The Lawn, Barcombe Mills, nr. Lewes, Sussex, England. (Vice-President, 1910-11, 1914-15; President, 1916-18).
1923. SAVAGE, H. E., Geological Survey Department, Batu Gajah, Perak.
1926. SAYID JAN BIN SAYID ASGAR ALI, Government English School, Sungei Patani, Kedah.
1922. SAYID MOHAMED IDID BIN ALI IDID, Alor Star, Kedah.
1926. SAYID SHAIDALI, Government English School, Batu Gajah, Perak.
1921. SCHIDER, DR. R., Miri, Sarawak.
1926. SCOTT, MISS A. M., Sentosa Hall, Singapore.
1929. SCOTT, HON. MR. JOHN, C.M.G., The Colonial Secretariat, Singapore.
1920. *SCOTT, DR. WAUGH, Sungei Siput, Perak,

1906. SCRIVENOR, J. B., Batu Gajah, Perak. (Vice-President, 1922, 1924, 1926-30).
1915. *SEE TIONG WAH, Balmoral Road, Singapore.
1922. SEHESTED, S., Chartered Bank, Penang.
1927. *SELLS, H. C., Satuan, Burnham, Buckinghamshire, England.
1923. SHEARN, E. D., c/o Pooley & Co., Klyne Street, Kuala Lumpur, Selangor.
1926. SHEFFIELD, J. N., Topographical Surveys, Taiping, Perak.
1927. SHEFFIELD, W. D., Tanjong Pau Estate, Jitra, Kedah.
1923. SHEIKH ABDULLAH BIN YAHYA, CAPT., Bukit Timbalan, Johore.
1925. SHELLEY, HON. MR. M. B., c/o Colonial Secretariat, Singapore. (Council, 1930-).
1929. SHEPPARD, M. C. FFRANCK, Carcosa, Kuala Lumpur, Selangor.
1924. SIME, F. D., Bukit Lintang Estate, Malacca.
1926. SIMMONS, HON. MR. J. W., British Residency, Taiping, Perak.
1921. SIMPSON, P., Presgrave & Mathews, Penang.
1927. SIMPSON-GRAY, L. C., Labour Office, Ipoh, Perak.
1909. *SIMS, W. A., The Lodge, Gander Green Lane, Cheam, Surrey, England.
1928. SIVAM, M. S., District Office, Miri, Sarawak.
1926. SKINNER, C. F., Beaufort, Jesselton, British North Borneo.
1921. SKRINE, W. F. de V., c/o The Chartered Bank, Singapore.
1926. *SLEEP, A., Kuala Selangor, Selangor.
1929. SLOAN, T. I., c/o The British Borneo Timber Co., Sandakan, British North Borneo.
1922. SMALL, HON. MR. A. S., Treasury, Singapore.
1922. SMART, DR. A. G. H., Senior Health Officer, Perak.
1924. SMEDLEY, N., Raffles Museum, Singapore. (Hon. Treasurer, 1926-7; Asst. Hon. Secretary, 1928-9).
1928. SMITH, A. ST. ALBAN, Seletar, Singapore.
1930. SMITH, DR. A. W. H., Central Mental Hospital, Tanjong Rambutan, Perak.
1929. SMITH, C. R., Sandakan, British North Borneo.
1912. SMITH, PROF. HARRISON W., Papeari, Tahiti, Society Islands.
1924. SMITH, J. D., MAXWELL, Temerloh, Pahang.
1929. SMITH, J. H., Bruas Rubber Co., Ltd., Bruas, Perak.
1929. SMITH, W. T. H., Kuching, Sarawak.
1929. SMYTHE, H. W. ST. AUBYN, Pundut Estates, Pundut, Dindings.
1930. SOANG, A. I. C., Batoe Doelang Estate, HPk Semarang, Pontianak, Borneo.
1928. SOLLIS, C. G., Inspector of Schools, Penang.

- 1910. SONG ONG SIANG, HON. MR., C.B.E., Aitken & Ong Siang, Singapore.
- 1921. SOUTH, F. W., Department of Agriculture, Kuala Lumpur, Selangor.
- 1921. SPEERS, W. E., "San Souci" House, Larne, Co-Antrim, Ireland.
- 1925. SPROULE, HON. MR. JUSTICE P. J., Supreme Court, Penang.
- 1927. STAINES, E. A., General Post Office, Kuala Lumpur, Selangor.
- 1928. STANTON, W. A., Brooklands Estate, Banting, Selangor.
- 1925. STARK, W. J. K., Labour Office, Kuala Lumpur, Selangor.
- 1929. STEPHENSON, E. F., Electrical Inspector, Ipoh, Perak.
- 1926. STEVENS, E. H., c/o The British American Tobacco Co., Ltd., Keppel Road, Singapore.
- 1920. STEVENS, HON. MR. JUSTICE F. G., Supreme Court, Singapore. (Council, 1914-15).
- 1910. *STILL, A. W.,
- 1917. *STIRLING, W. G., Chinese Protectorate, Singapore, (Council, 1923-5, 1927-9).
- 1928. STOOKES, DR. V. A., Sandakan, British North Borneo.
- 1921. STOWELL, DE LA M., Victoria Institution, Kuala Lumpur, Selangor.
- 1930. STRAHAN, A. C., Victoria Institution, Kuala Lumpur, Selangor.
- 1926. STREET, A. C., 13, Palm Bungalow, Kuching, Sarawak.
- 1926. STROUTS, E. A., Forest Department, Kuala Lumpur, Selangor.
- 1927. STRUGNELL, E. J., Forest Office, Kuala Lumpur, Selangor.
- 1910. STURROCK, A. J., Sanitary Board, Kuala Lumpur, Selangor. (Vice-President, 1924).
- 1930. SUEUR, R. E. LE, Kuching, Sarawak.
- 1926. SULTAN IDRIS TRAINING COLLEGE, Tanjong Malim, Perak.
- 1927. SUNGEI PATANI GOVERNMENT ENGLISH SCHOOL, Sungei Patani, Kedah.
- 1912. SWAYNE, J. C., Sarawak.
- 1923. SWORDER, G. H., Taiping, Perak.
- 1918. *SYKES, G. R., Chinese Protectorate, Kedah.
- 1930. SYMINGTON, C. F., Forest Research Institute, Kepong, Selangor.
- 1929. TAIT, W. G., Kuching, Sarawak.
- 1925. TALALLA, H. B., 12, Perak Road, Kuala Lumpur, Selangor.
- 1927. TALLACK, C. C., Silimponon, East Coast Residency, British North Borneo.

1908. TAN CHENG LOCK, HON. MR., 59, Heeren Street, Malacca.
1926. *TAN SOO BIN, 9, Boat Quay, Singapore.
1929. TATHAM, T. P. H., Budu Estate, Raub, Pahang.
1913. TAYLER, C. J., Telok Manggis Estate, Sepang, Selangor.
1928. *TAYLOR, E. N., Bankruptcy Department, Singapore.
1925. TAYLOR, W. R., MacLaine Watson & Co., Batavia, Java.
1926. TEMPLETON, T. V., Alor Star, Kedah.
1926. TERMANSEN, V., Kuala Hau, Kelantan.
1921. TERRELL, A. K. A. B., Presgrave & Mathews, Penang.
1929. TERRY, R. A., Survey Department, Kuala Trengganu, Trengganu.
1927. THILLAIMUTHU, S., Kennedy Burkill & Co., Ltd., Ipoh, Perak.
1921. *THOMAS, L. A., Chief Police Office, Singapore.
1926. THOMAS, T. J., 17, Fort Terrace, Malacca.
1923. THORNE, HON. MR. JUSTICE W. H., Ipoh, Perak.
1930. TIVY, L. W., Katoyang Estate, Tanjong Malim, Perak.
1926. TOYO BUNKO, 26, Kami-Fujimayecho, Hongo, Tokyo, Japan.
1930. TRATHEN, R., Sime Darby & Co., Ltd., Malacca.
1930. TREEBY, J. W. C., Tanjong Rambutan, Perak.
1930. TURNER, H. G., c/o Secretary to the High Commissioner, Government Offices, Singapore.
1923. UNDANG OF REMBAU, THE, Rembau, Negri Sembilan.
1930. UNIVERSITY LIBRARY, THE, University of Rangoon, Rangoon, Burma.
1925. VENABLES, O. E., Seremban, Negri Sembilan.
1928. VERNON, DR. G. H., Thursday Island, Australia.
1927. VETHAVANAM, J. R., Bungsar Road, Kuala Lumpur, Selangor.
1926. *WADDELL, MISS M. C., Government Girls School, Alor Star, Kedah.
1922. WALKER, E. G., c/o United Engineers, Ltd., Singapore.
1926. WALKER, H. HOPSON, Klang, Selangor.
1926. *WALLACE, W. A., Revenue Surveys, Taiping, Perak.
1930. WALTERS, G. J., Kuching, Sarawak.
1921. WALTON, B. S., Land Office, Malacca.
1923. WAN IDRIS BIN IBRAHIM, Muar, Johore.
1927. WATSON, E. L., Kuala Lumpur, Selangor.
1917. WATSON, J., Education Office, Kuala Lumpur, Selangor.
1916. WATSON, J. G., Forest Research Institute, Kepong, Selangor.
1916. WATSON, SIR MALCOLM, Ross Institute, Putney Heath, London, England.
1930. WATSON-HYATT, R. D., Clifford School, Kuala Kangsar, Perak.
1930. WELLER, H. R., c/o The Hongkong Bank, Singapore.

1926. WHEATLEY, M., Victoria Institution, Kuala Lumpur, Selangor.
1926. WHEELER, L. R., c/o Royal Empire Society, London, W.C.2, England.
1927. WHITE, REV. GRAHAM, Parsonage, Ipoh, Perak.
1923. WHITFIELD, L. D., Education Office, Muar, Johore.
1929. WHYTE, R. P., Posts and Telegraphs Dept., Kuala Lumpur, Selangor.
1926. *WILCOXSON, W. J., c/o The Straits Trading Co., Ltd., Singapore.
1926. WILHELM, DR. O., 114, Mittlere Strasse, Basel, Switzerland.
1923. WILKINSON, H. B., 65, Harcourt Terrace, London, S.W.10, England.
1920. *WILKINSON, R. J., C.M.G., Poste Restante, Mitylene, Greece.
1926. *WILLAN, T. L., Gopeng Road, Batu Gajah, Perak.
1921. WILLBOURN, E. S., Batu Gajah, Perak.
1926. WILLIAMS, A., District Office, Dindings.
1921. WILLIAMS, E. T., Colonial Secretariat, Singapore.
1922. *WILLIAMS, F. L., Chinese Protectorate, Singapore.
1929. WILLIAMS, G. C. G., Singapore Club, Singapore.
1921. WILLIAMS, R. M., Paterson Simons & Co., Ltd., Singapore.
1927. WILLIAMSON, PROF. K. B., Tana Rata, Cameron's Highlands *via* Tapah.
1925. WILSON, C., Labour Office, Kuala Lumpur, Selangor.
1910. *WINKELMANN, H.,
1923. WINSON, V. H., Office of the Senior Engineer, P. & T. Department, Penang.
1904. WINSTEDT, THE HON. DR. R. O., C.M.G., D.LITT., Education Office, Singapore. (Vice-President, 1914-15, 1920-1, 1923-5, 1928; President, 1927, 1929).
1927. WOOD, D. D., Sandakan, British North Borneo.
1908. *WOOD, E. G., c/o King & Co., 65, Cornhill, London, England.
1913. WOOD, W. L., Istana Gardens, Johore Bahru, Johore.
1920. WOOLLEY, G. C., Sandakan, British North Borneo.
1927. WOOLLEY, J. B., "Harbledown," Cambridge Road, Great Shelford, Cambridge, England.
1922. WORLEY, N. A., Education Office, Kuala Lumpur, Selangor.
1905. *WORTHINGTON, A. F., (Vice-President, 1924).
1921. WURTZBURG, MAJOR C. E., Mansfield & Co., Ltd., Singapore. (Council, 1924-6; 1930; Hon. Secretary, 1915; Vice-President, 1927, 1929).
1914. WYLY, A. J., Lebong Donok, Moeara Aman, Sumatra.
1923. WYNNE, M. L., Police Office, Kuala Lumpur, Selangor.

1926. YAHYA BIN AHMAD AFIFI, 70, The Arcade,
Singapore.
1923. *YATES, H. S., Rt. 5, Box 114, Santa Rosa, California,
U.S.A.
1917 *YATES, MAJOR W. G.,
1920. *YEW DALL, CAPT. J. C., c/o Lloyds Bank, 6, Pall
Mall, London, W.1, England.
1927. YOUNG, C. G., Byram Estate, Nibong Tebal, Prov.
Wellesley.
1904. *YOUNG, H. S., Rosemount, Tain, Rosshire, England.
1920. ZAINAL ABIDIN BIN AHMAD, Sultan Idris Training
College, Tanjong Malim, Perak.

RULES
of
The Malayan Branch
of the
Royal Asiatic Society.

I. Name and Objects.

1. The name of the Society shall be 'The Malayan Branch of the Royal Asiatic Society.'
2. The objects of the Society shall be:—
 - (a) The increase and diffusion of knowledge concerning British Malaya and the neighbouring countries.
 - (b) the publication of a Journal and of works and maps.
 - (c) the acquisition of books, maps and manuscripts.

II. Membership.

3. Members shall be of three kinds—Ordinary, Corresponding and Honorary.

4. Candidates for ordinary membership shall be proposed and seconded by members and elected by a majority of the Council.

5. Ordinary members shall pay an annual subscription of \$5 *payable in advance on the first of January in each year.*

No member shall receive a copy of the Journal or other publications of the Society until his subscription for the current year has been paid.

Newly elected members shall be allowed to compound for life-membership for \$100; other members may compound by paying \$50, or \$100 less the amount already paid by them as ordinary members in annual subscriptions, whichever of these two sums is the greater. Societies and Institutions are eligible for ordinary membership.

6. On or about the 30th of June in each year the Honorary Treasurer shall prepare and submit to the Council a list of those members whose subscriptions for the current year remain unpaid. Such members shall be deemed to be suspended from membership until their subscriptions have been paid, and in default of payment within two years shall be deemed to have resigned their membership*

* BYE-LAW, 1922. "Under Rule 6 Members who have failed to pay their subscription by the 30th June are suspended from membership until their subscriptions are paid. The issue of Journals published during that period of suspension cannot be guaranteed to members who have been so suspended."

7. Distinguished persons, and persons who have rendered notable service to the Society may on the recommendation of the Council be elected Honorary Members by a majority at a General meeting. Corresponding Members may, on the recommendation of two members of the Council, be elected by a majority of the Council, in recognition of services rendered to any scientific institution in British Malaya. They shall pay no subscription; they shall enjoy the privileges of members (except a vote at meetings and eligibility for office) and free receipt of the Society's publications.

III. Officers.

8. The officers of the Society shall be:—

A President.

Vice-Presidents not exceeding six, ordinarily two each from (i) the Straits Settlements, (ii) the Federated Malay States and (iii) the Unfederated or other Protected States, although this allocation shall in no way be binding on the electors.

An Honorary Treasurer.

An Honorary Secretary.

Five Councillors.

An Assistant Honorary Secretary.

These officers shall be elected for one year at the Annual General Meeting, and shall hold office until their successors are appointed.

9. Vacancies in the above offices occurring during any year shall be filled by a vote of the majority of the remaining officers.

IV. Council.

10. The Council of the Society shall be composed of the officers for the current year, and its duties and powers shall be:—

(a) to administer the affairs, property and trusts of the Society.

(b) to elect Ordinary and Corresponding Members and to recommend candidates for election as Honorary Members of the Society.

(c) to obtain and select material for publication in the Journal and to supervise the printing and distribution of the Journal.

(d) to authorise the publication of works and maps at the expense of the Society otherwise than in the Journal.

(e) to select and purchase books, maps and manuscripts for the Library.

(f) to accept or decline donations on behalf of the Society.

(g) to present to the Annual General Meeting at the expiration of their term of office a report of the proceedings and condition of the Society.

(h) to make and enforce by-laws and regulations for the proper conduct of the affairs of the Society. Every such bye-law or regulation shall be published in the Journal.

11. The Council shall meet for the transaction of business once a quarter and oftener if necessary. Three officers shall form a quorum of the Council.

V. General Meetings.

12. One week's notice of all meetings shall be given and of the subjects to be discussed or dealt with.

13. At all meetings the Chairman shall in the case of an equality of votes be entitled to a casting vote in addition to his own.

14. The Annual General Meeting shall be held in February in each year. Eleven members shall form a quorum.

15. (i) At the Annual General Meeting the Council shall present a report for the preceding year and the Treasurer shall render an account of the financial condition of the Society. Copies of such report and account shall be circulated to members with the notice calling the meeting.

(ii) Officers for the current year shall also be chosen.

16. The Council may summon a General Meeting at any time, and shall so summon one upon receipt by the Secretary of a written requisition signed by five ordinary members desiring to submit any specified resolution to such meeting. Seven members shall form a quorum at any such meeting.

17. Visitors may be admitted to any meeting at the discretion of the Chairman but shall not be allowed to address the meeting except by invitation of the Chairman.

VI. Publications.

18. The Journal shall be published at least twice in each year, and oftener if material is available. It shall contain material approved by the Council. In the first number of each volume shall be published the Report of the Council, the account of the financial position of the Society, a list of members and the Rules.

19. Every member shall be entitled to one copy of the Journal, which shall be sent free by post. Copies may be presented by the Council to other Societies or to distinguished individuals, and the remaining copies shall be sold at such prices as the Council shall from time to time direct.

20. Twenty-five copies of each paper published in the Journal shall be placed at the disposal of the author.

VII. Amendments of Rules.

21. Amendments to these Rules must be proposed in writing to the Council, who shall submit them to a General Meeting duly summoned to consider them. If passed at such General Meeting they shall come force upon confirmation at a subsequent General Meeting or at an Annual General Meeting.

Affiliation Privileges of Members.

Royal Asiatic Society. The Royal Asiatic Society has its headquarters at 74 Grosvenor Street, London, W., where it has a large library and collection of MSS. relating to oriental subjects, and holds monthly meetings from November to June (inclusive) at which papers on such subjects are read.

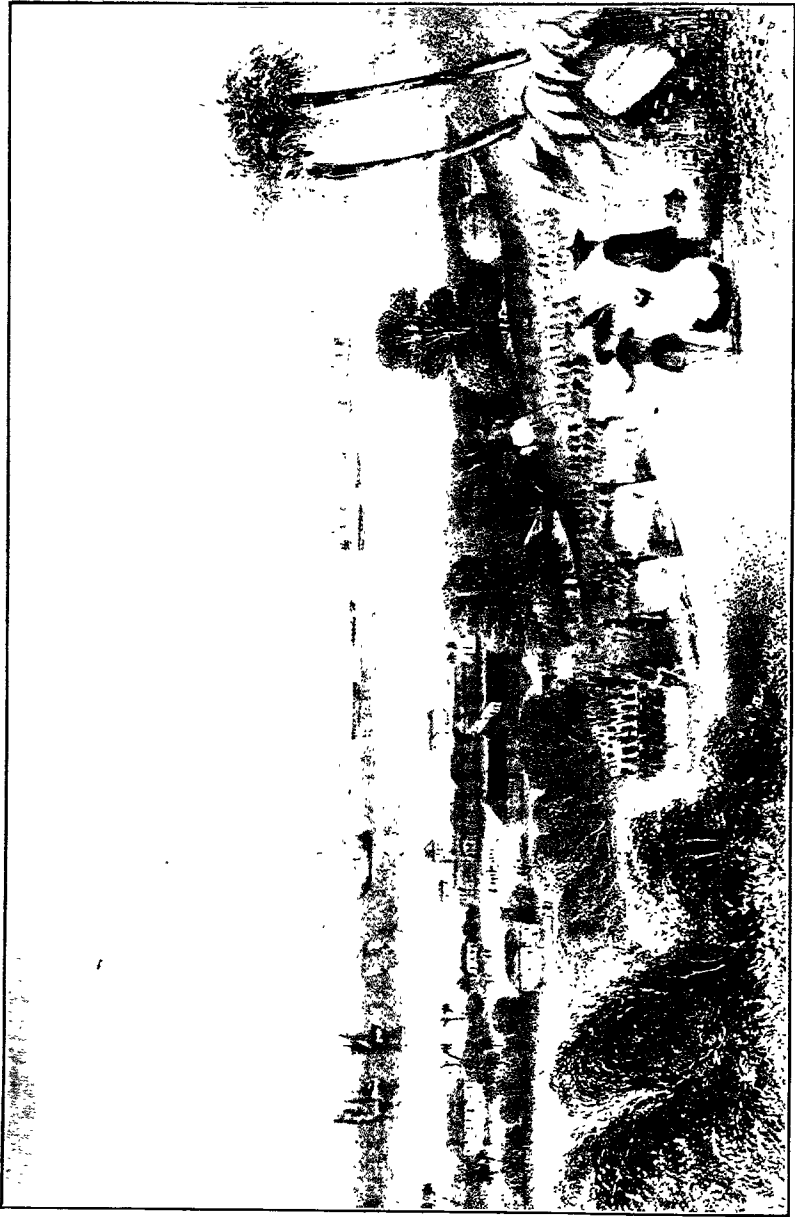
2. By Rule 105 of this Society all the Members of Branch Societies are entitled when on furlough or otherwise temporarily resident within Great Britain and Ireland, to the use of the Library as Non-Resident Members and to attend the ordinary monthly meetings of the Society. This Society accordingly invites Members of Branch Societies temporarily resident in Great Britain or Ireland to avail themselves of these facilities and to make their home addresses known to the Society so that notice of the meetings may be sent to them.

3. Under Rule 84, the Council of the Society is able to accept contributions to its Journal from Members of Branch Societies, and other persons interested in Oriental Research, of original articles, short notes, etc., on matters connected with the languages, archæology, history, beliefs and customs of any part of Asia.

4. By virtue of the aforementioned Rule 105 all Members of Branch Societies are entitled to apply for election to the Society without the formality of nomination. They should apply in writing to the Secretary, stating their names and addresses, and mentioning the Branch Society to which they belong. Election is by the Society upon the recommendation of the Council.

5. The subscription for Non-Resident Members of the Society is 30/- per annum. They receive the quarterly journal post free.

Asiatic Society of Bengal. Members of the Malayan Branch of the Royal Asiatic Society, by a letter received in 1903, are accorded the privilege of admission to the monthly meetings of the Asiatic Society of Bengal, which are held usually at the Society's house, 1 Park Street, Calcutta.



Singapore.

OLD SINGAPORE.

(PLATE I)

The original of Plate I is an engraving, apparently unpublished, with the title "Singapore" ("C. Graham del., A. H. Payne sculps;").

It was found in a shop in the Hague and is now the property of Mr. A. W. Harries who has kindly given permission for its reproduction.

The size of the plate is 16.5 cm. by 10.8 cm. and it evidently depicts the young settlement of Singapore in the first half of the last century, probably in the late 'thirties or early 'forties from the view point of Fort Canning (then "Government Hill") facing S.E.

The possibility of artists' licence must always be kept in mind and in this case it would almost certainly tend to a simplification of the illustration rather than to the addition of features.

The print seems to show the town in an earlier state of development than another print claiming to represent Singapore in the 'forties.

Prominent features are the Singapore river on the right with the row of godowns already well established on the right bank along Boat Quay.

The Courthouse on the left bank of the river was built in 1826-27: it is well shown in Begbie's view (about 1834) reproduced facing page 240 of Buckley's "Anecdotal History."

The Singapore Institution is prominent in the centre of the picture: its position agrees with a map said to have been made in 1835-38.

But between the Courthouse and the Institution the Armenian Church should be seen unless it is hidden by the trees. The building of this church was started and finished in 1835 and the original building was domed.

The number of ships in the harbour seems large but in Major Low's journal kept during 1840-41 we read, "The absorbing sight here to a well-wisher to his native country, must be the forest of masts which graces the spacious and secure harbour,upwards of fifty square-rigged vessels may be seen lying in the harbour, forming the outer line of shipping."

F.N.C.

RECOLLECTIONS OF CAMERON'S HIGHLANDS AND FRASER'S HILL.

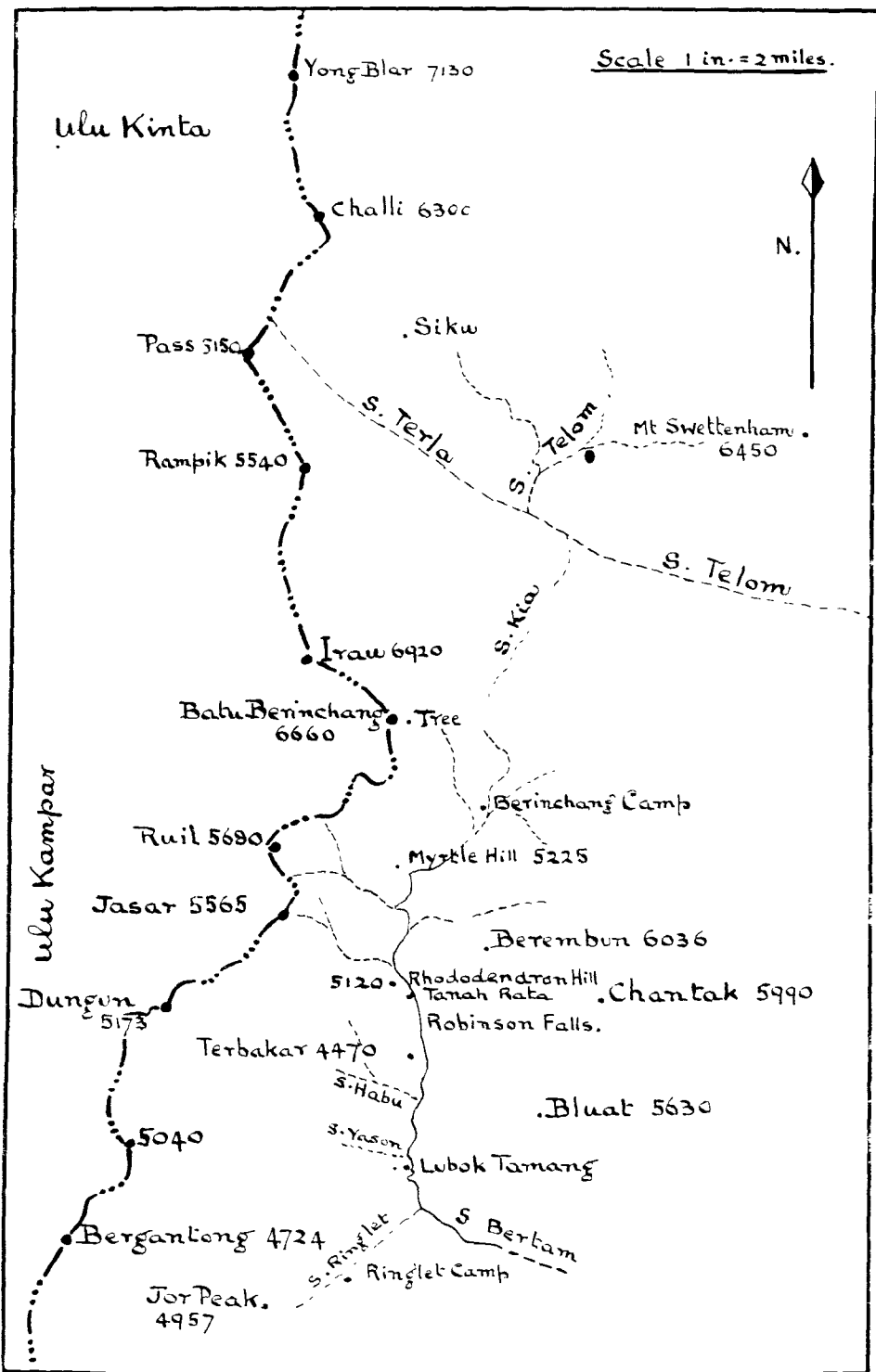
By J. B. SCRIVENOR.

(Plates II—IV and a Sketch Map.)

Fraser's Hill, on the boundary of Selangor and Pahang, is now a well-known and popular hill-station, frequented by residents in all parts of Malaya, many of whom do not know the early history of the place. Cameron's Highlands, farther north and in process of development, are invaded by residents in Perak for week-ends who come down and ask older travellers like myself if they have been there yet. This has happened to me more than once recently, and it may be of some interest if I record my experiences in both these localities, experiences which date from 1904 in the case of Fraser's Hill, and 1906 in the case of the Lubok Tamang area of Cameron's Highlands.

CAMERON'S HIGHLANDS.

Before I describe my experiences on Cameron's Highlands and my very modest share of pioneer work there I will review briefly and partially only the extraordinary circumstances that led to Cameron's name being bestowed on country which he never saw, much less visited. W. Cameron was a surveyor employed by the Government who did a lot of exploratory work in the "eighties." In 1925 Sir George Maxwell published a Federal Council Paper, No. 13, in which he quotes a letter from Cameron dated September 4th 1885, describing his journey into Pahang from the Ulu of the Kinta River. He ascended Gunong Challi and described land in the Telom Valley as "a sort of vortex in the mountains, while for a wide area we have gentle slopes and *pamah* (plateau) land etc." As the view from Challi of what we now call Cameron's Highlands—the Ulu Bertam, or Bertang—is shut out by Gunong Irau and Gunong Batu Berinchang, Cameron cannot have referred to that country: and the description that he gives of his journey down to the plains of Pahang makes it quite clear that he travelled down the Telom. This river is shown in the sketch-map. Before Cameron's death, which took place in 1889 or 1890, as far as I can gather from Mr. Leonard Wray's paper (quoted below), an exaggerated estimate was formed of the extent of "Cameron's Land." It was decided to survey and open it up, but unfortunately it was thought that Cameron's Land extended as far as the part of Pahang that lies behind the Ulu Batang Padang, and it was attacked from that river, with Tapah as a base. Mr. F. St. George Caulfeild went up in 1904 and has left a sketch-map which shows "Cameron's Land" as a very small area (the present Lubok Tamang area) along a river S. S. W. of Gunong Berembun, which Mr. Caulfeild thought was the Telom, but which was really the Bertam. Starting from Tapah Mr. Caulfeild thought he had arrived at the same open land as that described by Cameron travelling from the Ulu Kinta. The mistake may have arisen in this way: Mr. Caulfeild shows the *Ulu*



CAMERON'S HIGHLANDS.

of the river he called the Telom on the southern slopes of Berembun. There certainly is a river there, named by the Sakais of that part of Pahang the S. "Ulam." It is quite understandable that anyone asking the Sakais the name of that stream might mistake "Ulam" for "Telom"—understandable at any rate to anyone familiar with the difficulties of following Sakai speech accurately. But Mr. Caulfeild was not the first to make this mistake. In the *Journal of S. B. R. A. S.* for 1890, No. 21, pp. 123—165, Mr. Leonard Wray published a very interesting and full account of a journey to the *Ulu* of the Batang Padang and beyond during the year 1888, accompanied by his brother, Mr. Cecil Wray. They crossed into Pahang and Mr. Leonard Wray first struck southwards and reached a mountain which he thought was Berembun and is now known as "Wray's Berembun." Then he went northwards up the Bertam, thinking it was the Telom. On p. 160 is the following: "We here camped on the site of one of Cameron's old camps, and by the side of the river was a track which was undoubtedly his track, the elephant marks being distinctly visible. Mahrope, who was with Mr. Cameron on his journey through this valley, told us that two days march further down the stream would take us to a place where the river was navigable for *rakets*." From Mr. Wray's description it is clear to me that he went up the south-west slope of the real Berembun, which he had been looking for, as far as a Sakai *ladang* that I remember in 1906, and no one told him that he was on Berembun. He saw Gunong Terbakar, describing it as Gunong Jimawah (*Jemawa* = conceit), "a steep rocky hill that juts out into the Telom Valley," and then went up the stream that passes the southern side of Jimawah, obviously the S. Habu (see sketch-map), and crossed over into the Ulu Kampar and went down to the Kinta Valley. About 1924 the late Mr. W. Kellie Smith, Miss Helen Kellie Smith, Mrs. T. L. Willan, and Mr. G. R. Mills went up by that same route from Gopeng, and in 1930 Messrs. H. G. Harris, F. T. Ingham, G. F. Gripper, and R. Shutes descended by it. A curious thing in Mr. Wray's paper is that although he was sure he recognized Cameron's camp and track, he says that he was told by Sakais that Cameron's route lay farther north. But Mr. Wray had Mahrope's testimony; and the only explanation I can suggest as far as that gentleman is concerned is that he could not distinguish one valley from the other, knew Mr. Wray wanted to find Cameron's route, and so told him that was Cameron's route in order to please him. Mr. Wray also says that the elephant-track died away when he tried to follow it north, so it is extremely likely that it was made by wild elephants converging from the jungle on the river-bank.

So, owing to the lack of any maps and the difficulties of exploration—to get to Tapah from Taiping in those days one had to go round by sea—the Bertam south of Berembun and the Ulu Telom were made to coincide, the intervening country being unknown (see sketch-map). "Shots" at the sun with a sextant or theodolite for latitude in the Bertam valley to compare with the latitude given

by Cameron for Chalii would have revealed the error, but to those early explorers the Bertam valley above the falls was non-existent. The situation is suggestive of Einstein and two observers moving with high velocities in different places thinking that they were in the same locality in an area of warped space.

Who did find the country above the Robinson Falls? It was not Cameron, nor Mr. Wray, nor Mr. Caulfeild. Many Sakais must have passed over it, and as "*Berembun*" is a definitely Malay word (the "dewey" mountain), I suspect Malays arrived there too; but after reading all the evidence available I find that the first Europeans to penetrate this fish-less paradise were the late Mr. H. C. Robinson and Mr. C. Boden Kloss. Mr. Boden Kloss tells me that he, Robinson, and Mr. H. N. Ridley, went to Lubok Tamang in 1908 (see Jour. F. M. S. Museums iv, 1909, p. 1-4), and that he and Robinson went north over the area which is now Cameron's Highlands. Their objective was Gunong Irau, and they reached the slopes of Gunong Batu Berinchang. Let honour be to whom honour is due. Robinson had his Falls, but the other discoverer has no memorial.

I first went to the Lubok Tamang area in December 1906 with H. C. Robinson. Why we elected to go then, in particularly bad weather, I cannot remember. It rained nearly the whole time, but I have some amusing recollections of the trip. We went up the abandoned earthwork of the road that had been begun from Tapah. Gharris could go to the 12th mile and the earthwork extended to Jor, where there was a hut. I travelled a good deal with Robinson in those days and never ceased to admire the cheerful way in which he would plunge along, tripping up over everything that anyone could possibly trip up over, and humming indeterminate airs in an unknown scale the whole time. On that trip he fell head-first into an unfinished culvert with jagged masses of granite at the bottom. I feared he was badly hurt, but he emerged unscathed and still humming.

We explored the Ulu of the Batang Padang for a few days, reaching a pretty pool bright with Tapah Weed orchids, known then as Laut Tinggi (Mr. Leonard Wray refers to a Laut Tingal in his paper). Then we went over the divide to Lubok Tamang where there was another hut. Here Robinson disappointed me sadly. He had with him a large medicine-chest from which all the common remedies and balms had been exhausted but which still contained alleged remedies for fearsome and rare diseases. During our evening meal I noticed that Robinson was eating uncooked sausages out of a tin so was not altogether surprised when he woke me up in the night to tell me that he was feeling very ill. I pulled open the medicine-chest and offered him cholera tabloids (my memory on this point is not precise). He refused them and sternly refused all the remedies for rare diseases that I proffered. He only wanted hot-water and that put him right, so my hopes of watching the effects of the contents of the medicine-chest were frustrated.

By that date, December 1906, it was known that the river on which we were was the Bertam, not the Telom, but Robinson and I still thought that the land we were on was "Cameron's Land" or "Plateau." We went up Berembun with Sakai guides and on the way saw Gunong Terbakar, described by Mr. Wray as Gunong Jimawah. The name "*Terbakar*" was obviously bestowed on it by someone after the timber on the top had been burned. Sakais say that this was due to an accidental jungle-fire, and it must have occurred after 1888 because Mr. Wray says nothing about the top being bare of trees and did not mention the name "*Terbakar*."

We had taken a party of Sakais over with us from the Batang Padang, the chief then being Pa Pending. They were a little nervous about going into the Pahang Sakais' territory, but there was no friction, the "king" on the other side being a dear peaceful old gentleman named Pa Gedong. We all got on very well together and I gave Pa Gedong an old pair of boots—the only king on whom I have bestowed such a gift—and I can picture him now sitting in the jungle and grinning with delight as he slowly pulled them on.

On this occasion we did not see the falls, nor did we get any view from Berembun, so we returned without any knowledge of the Ulu of the Bertam.

My next visit was in August and September of 1922, when the party consisted of H. C. Robinson, Dr. H. P. Hacker (Medical Entomologist), Mr. W. M. Sands (Economic Botanist) and myself. For part of the time we were accompanied by Mr. A. C. Twyford of the Survey Department. It had been Sir George Maxwell's intention to lead this expedition into the promised land, discovered in 1908 by Messrs. Robinson and Kloss, but at the last moment he was prevented, so we explored under the leadership of Robinson, who, as a preliminary canter, came from Lipis up the Bertam and down to Tapah to meet the rest of the party there. His energy was astounding.

I started from Tapah two days before the rest of the party in order to choose a site for a camp at Lubok Tamang and make it ready. By now the old earth-work from the 12th mile to Jor was overgrown, but a little clearing had made a broad path, well-graded and therefore easy for baggage-carriers. It was my custom to walk behind the baggage on jungle-trips to prevent loitering, but on this occasion everything went so well and the morning was so fresh, the trees so green, nature so lovely, that I walked at the head of the procession thinking how fine it was to be able to walk through the giant forest enjoying its grandeur, secure from any harm. My pleasant thoughts, however, were cut short in an unexpected manner. A little before reaching the 18th mile (Jor being at the 20th.), I had turned a corner with a high bank on the left. Suddenly a very loud grunt greeted me from the bank: I expected a pig, but instead a tiger jumped out on the path about nine paces ahead (I was able to measure the distance afterwards.) Those who have had the

experience of meeting a tiger suddenly without any weapon handy will know how I felt. I cannot tell the whole story in cold print. Let it suffice to say that where the power of the human eye failed, the power of the human leg saved the situation. It happened that the animal was a tigress with cubs near by and possibly her behaviour was excusable under the circumstances, but I did not wait to argue the point. Nevertheless, we all arrived with all the baggage at Lubok Tamang in due course and selected a camp on the river bank close to the ruins of the hut Robinson and I had used in 1906. I have not been able to locate the exact spot since but I remember that there was a small tree there with abundant waxy, white flowers (*Medinilla*), and purple balsams growing on rocks in the river.

The rest of the party turned up in good order, not having seen the tigress, of whom I had warned them by messenger. We settled down to our various tasks. Hacker dodged mosquitoes. He was armed with white enamelled pie-dishes and spoons, and adorned by a long white ladle which hung from his belt behind, looking like a long white tail with a tuft on the end. He was particularly anxious to find pools of stagnant water among the rocks, a matter in which I helped him, and when he dipped his ladle therein and sighted mosquito-larvæ in one of the pie-dishes his face became suffused with a glow of enthusiasm that would have done credit to an early Christian martyr. Sands was bent on agricultural problems but I learned a lot of plant names from him in our rambles. I had to look for useful rocks and minerals, and, together with Robinson, did a lot of exploring. I also began making sketches from hills and the tops of stunted trees, using a prismatic compass for horizontal angles and an Abney's Level for vertical angles.

A number of Sakais congregated at our camp, but the old king, Pa Gedong, was dead and his son reigned in his stead. Later on, when traffic to the Highlands developed, the Batang Padang and Bertam Sakais deteriorated. They earned big wages as porters and spent them in a manner unbecoming the noble savage. They bought shoddy jewellery and made up parties to go to the cinema in Ipoh in hired motor-cars. One lot of Sakais astonished their employers by turning up wearing horn-rimmed spectacles which they had bought from an itinerant vendor of such things. The kingly mien of Pa Gedong was forgotten in a scramble for wealth and fripperies: the last time I saw Gedong II he asked me to give him money.

We stayed at the Lubok Tamang camp from August 18th until the 27th, when we moved to a new camp at the foot of the Robinson Falls. From this camp Robinson and I made our way up the falls, and we also ascended Terbakar and Berembun. The view from Berembun was very fine but our observations were disturbed by swarms of stinging ants. On the top of this mountain and on other heights near by a small, slender bamboo is abundant. This is, I believe, *Bambusa elegans* Ridley, or it may be *Bambusa magica*. To Malays it is *Buloh perindu* which, if fashioned into a musical instrument and played in a village, attracts all the ladies to the player.

When I first went up Berembun in 1906 I advised a Malay to take some down to try the effect on his womenfolk, but he objected that this bamboo could not possibly be the genuine article because it was so easy to obtain. The real *Buloh perindu* was guarded by jins and dragons, not to mention clouds from which lightning incessantly flashed. Talking of dragons reminds me that during this journey I obtained a very good specimen of a flying lizard from a Sakai. It only measured a few inches but was extraordinarily fierce. This reptile, if magnified, would only have fallen short of the "fabulous and extinct" dragons in not being able to breathe fire.

On August 31st we moved to a new camp above the falls on a bit of flat land which we called "Tanah Rata." Not very original as a name, but it is familiar now. Our camp was where the bridge now crosses the Bertam and, being under the shelter of high ground and protected by trees, it was far more comfortable at night than the split-bamboo erection on the hill which did duty for some years later as a Rest House. I would like to take this opportunity to say something about the names we gave to a few places during this visit to the Highlands. A local paper dated May 12th, 1925, advocating Malay names, stigmatized as "puerilities" such names as "Rhododendron Hill" and "Salvia Camp." The latter name is not likely to live as there is now nothing on the site to require a name, but "Tanah Rata," "Rhododendron Hill," "Myrtle Hill," "Parit Falls," and "Robinson Falls" have survived. The last name is in honour of our leader: the others are descriptive and apt. On the large-scale map of the Highlands (10 in. = 1 mile), Myrtle Hill and Rhododendron Hill appear as Bukit Kemunting and Bukit Mentigi respectively. I do not know how "*mentigi*" is arrived at as a Malay name for Rhododendron: R. J. Wilkinson gives the word as a Malay plant-name and suggests that it may be *Thibaudia* sp. but I am told that *Thibaudia* does not occur in Malaya. "Bukit Kemunting" is a literal translation of "Myrtle Hill" and I cannot see that a name becomes any less puerile by being given in another language. Anyone who has seen Rhododendron Hill when the bushes are all in bloom must agree that no better name could be given. About "Myrtle Hill" I had qualms in 1929. I took a friend of mine there who is a store of botanical knowledge and he asked me to show him the myrtles. The top of the hill had been cleared but I found a shrub near by which I took to be a myrtle, but my friend ejaculated "That! why that's a fig!" However, we found the myrtles ultimately and my fears that we should have called the place "Fig Hill" were dissipated.

On Myrtle Hill I fell on evil times while mapping the country from the top of a small tree. I was wearing a white topi and a swarm of big bees (*naning*), passing by, mistook me for a large and promising white flower. When they found I was not a flower they stung me in the back of the neck and I fell out of that tree with a nimbleness I had never shown before. I was in pain for two days.

Hacker prescribed various remedies but blandly added the information that he had none of them, so the only treatment I got was from a Malay who rubbed in tobacco juice.

We were on the land above the falls for eight days. Earlier in this paper I referred to it as a fish-less paradise. That is literally true, for although the Bertam at Tanah Rata is a stream about 20 feet broad, there are no fish at all, while the Highlands both above and below the falls can truly be called a paradise of wild flowers. The absence of fish may be due to the Robinson Falls forming a barrier up which no fish can swim, and down which pre-existing fish have been swept by floods. It has been suggested that Sakais may have exterminated the fish, but that is hard to believe seeing how few the Sakais are in number. Above the Robinson Falls there are no *Sakai lodgings*, but there is evidence of Sakais going there to set traps for small mammals in the trees and traps in the rivers for frogs.

The farthest point north that we reached on this journey was a tree (see map) on a spur of Gunung Batu Berinchang that Hacker and I climbed up by means of a rough ladder that must have been constructed by the men with Robinson and Kloss in 1908. The top of this tree is a mass of foliage so dense that one can stand on it fairly securely, and I was able to make a sketch of the Ulu of the Telom valley and the following peaks: Pass, Chali, Yong Blar, Kerbau, Yong Yau, Siku and Mt. Swettenham. Recent exploration has shown that the stream rising under Chali is the Terla, while the Telom rises between Siku and Mount Swettenham and at first flows south. The Ulu of the Telom between these peaks is gently sloping land and people who have seen it since 1922 have suggested that it is Cameron's "real" highlands. It certainly was part of the land he dreamed of, but it is smaller than the Ulu Bertam area and more difficult to reach. I described this Ulu Telom area in a report dated September 26th 1922.

This journey to Cameron's Highlands in 1922 was the last jungle trip I had with H. C. Robinson. There is no doubt that Robinson had a wider knowledge of the geography of the Malay Peninsula than anyone else. His journeys were mostly undertaken with a view to collecting zoological specimens but he also delighted in exploration for exploration's sake. He was a good organizer and his unflinching good-humour solved many a difficulty in the jungle. He was also extraordinarily generous. His death was a loss both to science and to Malaya.

I next went to Cameron's Highlands in 1926, by which time a large clearing had been made at Tanah Rata and broad paths had taken the place of the old Sakai tracks that we followed in 1922. There was fairly good accommodation for travellers at the Jor. Ringer, Tanah Rata, and Berinchang camps, but the building at Tanah Rata was painfully cold at night. Another trip was made in July of 1928 with Mr. C. C. Reade, when the earth-work of the

road had extended to the Habu valley. My objective on that occasion was locating quarry-sites for building-stone and in the ten days of my stay I had my fill of walking, even in that delightful climate. Another visit was in October 1929 with my botanical friend who gave me such a shock about figs and myrtles. He had not been there before and the pleasure he showed made that short visit the most enjoyable of all. It was also remarkable for the barely credible fact that when we arrived at Tanah Rata after walking from the 25th mile we went straight up Rhododendron Hill to see the Highlands bathed in the rays of the setting sun before going to the Rest House. My last visit was to Lubok Tamang on a Sunday, in 1930 by motor, with another friend and a visitor to Malaya. We had beer and sandwiches on a sandbank beside the Bertam. My friend insisted on that particular sandbank although it involved crossing the river by the branches of a dead tree. I was dressed in spotless white clothes and neat brown shoes. I fell in.

Cameron's Highlands, both above and below the Robinson Falls have one great drawback as a hill-station. They are enclosed by hills, which, although exceeding four and five thousand feet, appear to be insignificant *butts* from the valley but shut out all views of the lower country in Perak and Pahang. The scenery is not very impressive. To get a extensive view it is necessary to climb up a hill. To look down into Kinta it will be necessary to go up to the State boundary or to ascend Berembun. On the other hand Cameron's Highlands have great advantages. The greatest is the abundant water-supply. Others are the possibility of generating electric power, the gentle contours of the land, the cool climate, a moderate rainfall, and I must add, the flowers. I have been up many mountains in Malaya but have never seen so many flowers as on Cameron's Highlands. A list of plants was published in 1927 by Mr. R. Henderson (Journ. M. B. R. A. S. vol. v. part ii, Nov. 1927), but only coloured plates could do justice to the flowers. In clearings violets are common. They are pale in colour, it is true, and one must gather a big bunch before any scent can be detected, but they are violets nevertheless. The yellow balsam is common, sometimes forming bright banks of blossom. In wet places the purple balsam flourishes. Begonias are abundant: I measured one pink and white blossom that was three inches from top to bottom. In 1922 we found several beautiful kinds of ground-orchids that I had not seen before. Epiphytic orchids with beautiful large blossoms were also seen. The display of white rhododendrons at the height of the flowering-season is wonderful. One species of pitcher-plant, coloured white with streaks of crimson, reaches 11 inches in length. A little swamp near Tanah Rata ("*Taman Sedia*") contains abundant strange flowers. *Pauhinia* and a scarlet-flowered creeper (*Aeschynanthus*) brighten the trees. Several species of *Didymocarpus* flourish by the sides of the paths.

A common plant on the Highlands is a bramble that bears a fruit shaped like a loganberry, and of a bright orange colour.

These are edible, but it must be confessed that they have not much taste. They may improve with cultivation. A weed resembling "groundsel," used in England for feeding canaries, is also abundant in clearings.

Finally I would mention the strange, mossy jungle that grows on the ridges of Cameron's Highlands. It is possible to walk on a thick carpet of damp moss through long tunnels among shrubs and *buloh perindu*, festooned with moss and liverwort, on the higher ground. Such jungle is found on other Malayan mountains, but I do not remember any place where this growth is so well developed as on Cameron's Highlands. While wandering through it one cannot entirely throw off a feeling that an elf may suddenly mock you from the thicket, or a gossamer fairy peer down at you from the rhododendron blossoms above your head. But as a matter of fact the only strange creature I encountered in these mysterious groves was a very large centipede.

I would add as a postscript to the above that after this section of the paper was written Lt.-Col. J. P. Swettenham, Chairman of the Cameron's Highlands Development Committee, told me in a letter dated December 11th, 1930, that he had heard recently from Mr. F. St. G. Caulfeild who described a journey he made with Messrs. N. T. Gray and Cerruti (once Protector of Sakais, Batang Padang) to the mountains beyond the falls now known as Robinson's Falls. Mr. Caulfeild said that Cerruti fell while descending the falls and N. T. Gray ejaculated: We will call this spot "Cerruti Falls." Whether the falls where Cerruti fell were Robinson's Falls is, however, open to question. In the first place on Mr. Caulfeild's map of 1904 no falls are shown where Robinson's Falls are situated. Again, anyone going to Tanah Rata in those days would follow a Sakai path which goes over a spur of Berembun. Robinson and I followed the first half of it in 1906 to ascend that mountain, and returned by it in 1922 from Tanah Rata after scrambling up the falls, where there is no path at all. From this Sakai path that crosses the spur of Berembun the falls cannot be seen. Mr. Caulfeild's 1904 map shows that the Sungei Ulu was mistaken for the Ulu Sungei Telom. It is possible that the falls referred to are somewhere on that river and that the mountains beyond which the party went to were Chantak and Bluat. In any case, if the party really reached Tana Rata and the mountains farther north, Jasar, Ruil, Batu Berinchang, and Irau, it is difficult to understand why nothing is shown on the 1904 map north of Berembun. The details of Mr. Caulfeild's visit in 1904 are given in Sir George Maxwell's paper (pp. 5 and 6) who, after quoting a letter from the Acting Director of Public Works, dated December 6th 1904, wrote (p. 7) "there is no record of any further investigation of Cameron's Highlands or of any further action in connection with this road until 1920." I have read again Cerruti's book "My Friends the Savages" (1908) to see if he, in his account of his experiences among the Sakais of the Batang

Padang, says anything about these falls and the mountains beyond, but unfortunately his geography is very vague and the book has no map. He writes, indeed, of roaring torrents springing from mountain-tops, which is at least unusual, and certainly not observable on Cameron's Highlands.

FRASER'S HILL.

Unlike Cameron's Highlands, Fraser's Hill was a well-known and easily accessible place long before it developed into a hill-station. The hill is named after Mr. L. J. Fraser, who resided in Singapore for some years and then migrated to Selangor to manage a transport-service between Kuala Kubu and Raub before the road was built and only a bridle-path existed. This path can still be followed on the Pahang side of the Gap; on the Selangor side it is overgrown. I have been told that the village Sangka Dua was about half way up to the Gap on this path.

When Fraser started his transport-service Chinese were mining for tin on and near what is now Fraser's Hill. In 1894 he acquired land there himself and collected ore from Chinese working on tribute, chiefly in the Yet and Sempam valleys. The geography of the locality is simple, and, as the F. M. S. R. distributes a map, one is hardly necessary here; but before going any farther it will be as well to get the topography fixed in our minds. When driving up from the Gap to Fraser's Hill we follow a road which is a little below the Selangor-Pahang boundary, and on the Selangor side. On the left is the Ulu of the Selangor River. On passing the traffic-control gate at the top of the road we get onto the divide between the Selangor River and the Sungei Tras, which flows through the Golf-Course and down the steep valley beyond (in old days this stream was generally referred to as the "Batang Tras"). Continuing up the road to the Ulu of this stream and past the Superintendent's Office we come to the watershed between the Tras and the Yet, also the children's playground. The Ulu Yet is the steep declivity to the north of the watershed, where there are many tree-ferns. Turning to the left and following the path to Pine-Tree Hill one soon arrives again at the Selangor-Pahang boundary.

Fraser's mines were prosperous, and there were also many small "*lampans*" in the Tras valley; in fact the Golf Course, which was then called "Pamah Lēbar," because it was a comparatively open and gently sloping valley, was cut up by *lampans* from one end to the other. At one time a mining engineer, Mr. F. Ponsford, resided at Pamah Lēbar, prospecting tin-lodes in the hill under "Mogador" bungalow.

Fraser resided for some years at "Bukit Fraser" (we were not so particular then about mixing Malay and Scotch), but he died before I first went there in 1904, when the Manager was Mr. Saunderson, a very genial mining engineer who lived in a hut with walls made of Malay mats, atap roof, and earth floor, somewhere

on the slope below "Polygone" bungalow. On my first visit I walked up from Tras *via* Kuala Yet, where Mr. G. Hembrey then lived. Fraser's Hill could also be reached from Tras by a path up the Batang Tras (this still exists), and by the path from the Gap which is upkept now. In those days week-ends at the Gap were a common form of relaxation for those working in Pahang, combined with a walk up to Bukit Fraser to call on Saunderson, unless he came down to see us. The path from the Gap was much as it is now, descending into the Tras valley about the present site of "Chalk Farm" and crossing the Golf Course at the Maxwell Arms end, then ascending the gully at the head of which is the Superintendent's Office. There is still a trace of the old path in that gully which wakes memories of pleasant days twenty-six years ago.

In 1909 the mining leases were taken over by a Company, the Sempam Tin Mining Company, under the managership of Mr. Gerald Bowen. At first he lived in Saunderson's old hut. I and my wife stayed with him there and I remember he had a Tortoise Stove to warm it, in which he could burn almost anything, and which gave out an amount of heat too great even for Bukit Fraser.

The Manager was not required to live in the hut for long. A house was built for him above the present children's playground. But the Company did not prosper. An unfortunate dispute arose between them and the Raub Australian Gold Mines, who have a power-station on the Sempam River below Kuala Yet, on the subject of tailings and damage to machinery, which ended ultimately in the Company having to stop work. Before that happened, however, they were told that if they sent their tailings into Selangor they could carry on. This led the Manager to install a small monitor on the hill below "Polygone" the tailings being taken by a flume past the site of the Maxwell Arms into the Selangor drainage area. The cut made by this monitor in the hill below "Polygone" is still plainly visible. The whole output of the Sempam Tin Mines Company was supposed to come from it.

The difficulty about tailings was fatal to the Sempam Tin Mining Company, but work could still be carried on in the Tras valley. Mr. Ponsford had acquired a lot of the land in Pamah Lēbar by 1914 and in that year sent me a plan showing several tin-lodes in the hill under "Mogador." The plan also shows a reservoir in the neighbourhood of the present Office Tennis-court, and the path to the Gap. Mr. Ponsford called his land the "Ulu Tras Tin Mine."

When tin-mining ended on Pamah Lēbar I cannot remember, but it is certain that the tin there was not exhausted when work on the golf-course began, because one of the contractors found a small lode and was allowed to work it. It is also certain that there are many small veins containing ore left in other parts of Fraser's Hill. I have seen them in the road-cuttings and remember how

Chinese miners used to work similar veins in Saunderson's time. However, it is not likely that Fraser's Hill will ever become a tin-mine again. The old leases in the Ulu Sempam and the lower part of the Yet valley have been taken over by the Raub Australian Gold Mines Ltd.

When mining had ceased the house that had been built by the Sempam Tin Mining Company was bought by the Pahang Government and formed the nucleus of the hill-station, which has now grown to such an extent that the houses and roads, including the Peninjau road, cover about two square miles, and the untidy *lampans* of Pamah Lēbar are replaced by the green turf of the Golf Course. I have no doubt that if anyone were to scramble down the Yet valley he would come on many old tin-workings, but I confess that at my time of life I prefer a bench outside the Maxwell Arms, with the view down the old Pamah Lēbar, and a glass of ale. Would that L. J. Fraser, who is reputed to have habitually worn a bowler hat, could join me and see how his hill has changed.

Compared with Cameron's Highlands, Fraser's Hill has one great disadvantage, namely a poor water-supply; but on the other hand it has abundant stone for building, conveniently situated close to or on sites for houses, and it has magnificent scenery. Cameron's Highlands is valley-land; Fraser's Hill is a station perched on steep ridges, excepting the Golf Course. On Cameron's Highlands it is necessary to climb a hill to get an extended view; in most of the houses on Fraser's Hill the only exertion necessary is getting out of bed and looking out of the window. In "Mogador" and "Polygone" are panoramas showing the visitor the names of the mountains visible from those bungalows. Unfortunately there are two mistakes on them: they make G. Gapis appear to be a mountain in Kelantan whereas it is a hill very near by, scarred by tin-mines; and Bukit Petri is said to be limestone whereas it is really quartzite. But these errors do not affect the beauty of the scenery. From the meteorological station between "Mogador" and "Ledeghem" on a clear morning the finest view that I know of the mountains of the Peninsula can be seen. Close by in the Main Range are G. Semangko and G. Liang. In the Liang valley the tin-mines can be seen. To the south are G. Raja, G. Mengkuang Lēbar and Bukit Kutu. To the east is the great Benom Range. Far away to the N. N. E. are the rugged peaks of the Tahan Range and the more distant mountains of Kelantan. Go to Peninjau and look down on the great plains of Pahang. Immediately below you is Tras, separated from the plains by a long range of foothills: there is the gorge through which the road from Tras to Raub wanders. Beyond Raub the road to Lipis passes on the left of a conspicuous limestone hill and skirts the northern end of the Benom Range. The railway from Lipis to Kelantan passes between the Tahan Range and a low hill to the west of it.

On the ridges of Fraser's Hill the wild flowers are not so varied or so abundant as in the valleys of Cameron's Highlands, but the gardens show what can be done with cultivated flowers and turf. The lawns round "The Lodge" would rouse the envy of an English gardener. Every garden is bright with blossom-dahlias, chrysanthemums, geraniums, lupins, salvias, antirrhynums, marigolds and daisies, roses, verbenas, fuchsia, petunia, Indian pinks, carnations, pansies, zinnias, coreopsis, gladioli, montbresia, balsams, nasturtiums, corncockles, buddleia, heliotrope, phlox; and sweet-smelling purple violets nestle in their beds. Morning Glory and *tecoma* by the roadsides flaunt their purple and orange before the wild baubinea in the tree tops. The scarlet passion-flower covers screens and pergolas. If Cameron's Highlands develop into so charming a hill-station as Fraser's Hill, with its trim but solid granite houses, red-tiled roofs, and bright gardens, the next generation of sojourners in Malaya will be indeed fortunate.

PLATES.

Photographs of sketches made by the author on Cameron's Highlands during 1922.

PLATE II View of the Lubok Tamang area from a hill above the camp. On the far left is G. Berembun: in the centre G. Chantak and G. Bluat. The Bertam makes a sharp turn to the east on the right. On the left is an old Sakai *ladang* in the flat Bertam valley. This is part of the land thought in 1904 to be "Cameron's Land."

PLATE III 1. View from G. Berembun. The following peaks are visible, beginning on the left; Jasar; Chabang; Ruil; Sugu; Irau; Batu Berinchang; Mt. Swettenham. Kin'a is dimly visible beyond Jasar and Chabang.

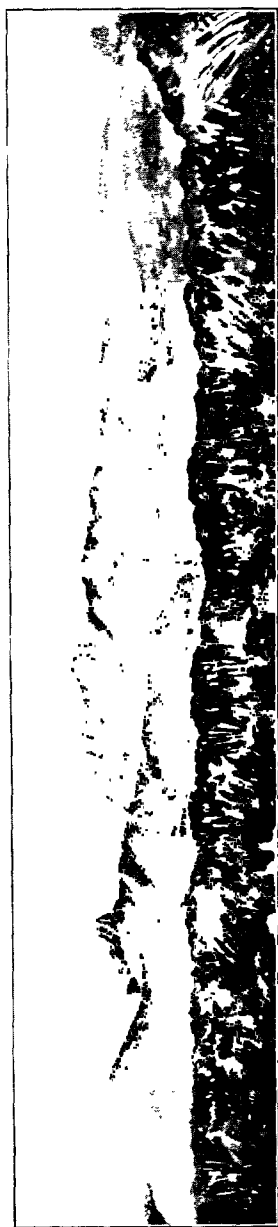
2. View from Rhododendron Hill, looking north. The undulating land in the middle distance is Cameron's Highlands above the Falls. On the right is Berembun.

PLATE IV 1. View from a tree on a spur of G. Batu Berinchang, looking north. Rampik, Pass, and Challi are on the left, Challi being the sharp peak with a gentle slope to the right. Siku is the ridge to the right of Challi. On the right are the slopes of Mt. Swettenham. Between Chiku and the slopes of Mt. Swettenham is the gently undulating land in the Ulu Telom. In the far distance are Kerbau (on the left) and mountains in Kelantan.

2. View from Myrtle Hill, looking south. On the right are Jasar and Ruil. In the middle distance is Rhododendron Hill; on the left the slopes of Berembun. In the centre is the low and almost flat land where the golf-course is being made.



Scrivenor: Cameron's Highlands.



Scitrener: Cameron's Highlands.



Scrivenor; Cameron's Highlands.

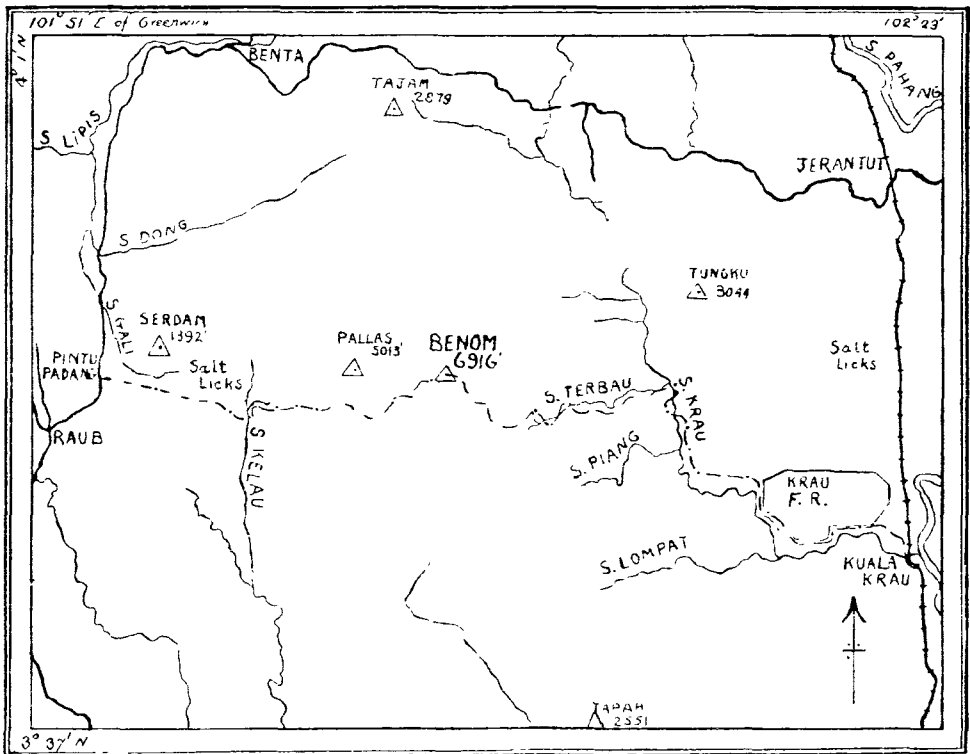
AN ASCENT OF GUNONG BENOM FROM RAUB.

By E. J. STRUGNELL and E. S. WILLBOURN.

PLATES V—VIII AND A SKETCH MAP.)

Gunong Běnom is the highest peak of an isolated mountain-group near the centre of Pahang. Its height is given on the latest maps as 6,916 feet and it is one of the highest mountains in the Malay Peninsula.

The word *běnom* is used by the Malays in the sense *hutan běnom*, which may be translated as "a faraway, dark forest of tall trees in which no one lives," a true description of this mountain.



MAP OF THE COUNTRY SURROUNDING GUNONG BENOM.
THE DOTTED LINE SHOWS THE ROUTE OF THE JOURNEY
SCALE. EIGHT MILES TO ONE INCH.

Incidentally the phrase "*pergi hutan běnom*" is the equivalent of our consigning a person to the nether regions. Gunong Běnom has a bad reputation for evil spirits. Noises of people talking and of rocks falling are said to be heard, and there is a tale, terrifying to the credulous Malay peasant, of a large *běrok*, or monkey, which inhabits the mountain, a fierce animal standing five feet high on

all fours. Fables apart, it is certain that some curious coincidences of sickness and death have occurred in connection with the mountain, and so, in the case of the present trip, it was not surprising that desertions were frequent before the day of departure.

This account describes an ascent going eastwards from Raub, followed by the descent, still eastwards, down the other side, to the railway at Kuala Krau. It is believed that no one had previously reached the summit of Běnom from the west.

The descent to Kuala Krau was made under very difficult conditions, for we could not get a view from the summit owing to clouds, and could not therefore "lay a course" along a ridge leading downwards towards the east, as had been hoped. The old track climbing up from Sungai Krau could not be found, and direction had to be kept by compass. This entailed a very hard journey, more strenuous than the climb up from Raub.

An attempt was made on the mountain from the Raub side by W. D. Barnes, Warden of Mines, Pahang, in 1900, for the purpose of putting a trigonometrical-survey beacon on the summit. (Journ. S. Br. R. A. Soc. No. 39, 1903.) He succeeded in reaching Kluang Terbang, named Gunong Pallas on the maps, a peak three miles away from the real summit, and separated from it by several deep valleys. This was the only attempt from Raub of which there is any record, before E. J. Strugnell's trip of September 1929, when he reached 5,500 feet, and found the ridge which we later followed to the top. However, on that first occasion, he was forced to return to Raub to get medical attention for a poisoned hand.

The mountain was climbed from Kuala Krau in 1906 by J. N. Sheffield accompanied by A. E. Young, who erected a survey beacon which is still in good condition, on the summit. F. R. Twiss observed from the summit in 1907, and A. Cochrane in 1917. In 1923, I. H. N. Evans, of the Museums Department, made an ascent from Ulu Dong in the north, considerable difficulty being experienced in finding the top. The present trip was made in May, 1930, and the top was reached early on the fifth day, the whole journey, from Raub to the summit of Běnom, and down to Kuala Krau on the Pahang river, taking ten days.

The party numbered thirty four, and consisted of the two writers, Mayah bin Latib, a Malay collector of the Geological Survey Department, Forester Ismail bin Haji Zainudin, four forest guards, Ah San, a Hylam "boy," and twenty five coolies. Actually, we had planned to have thirty coolies, and, by sending most of them two days ahead, laden with rice and camp-kit, had hoped to arrange that the first two camps should be more comfortable than usual, and, really more important, that the coolies should have a good rest to prepare for the steep climb up Běnom. However, although the party had been put in charge of a Malay who had accompanied E. J. Strugnell on the expedition of the previous September, and who therefore knew the sites of the first and second

camps, yet he could not find the old *reñtis* (narrow path cut through the jungle), and had not the initiative to cut his own way due east. Two days afterwards, on May 19th, we came across them at the edge of the jungle, only about three miles from the road.

Two sick coolies had to be sent back, and these casualties, together with previous desertions, reduced the number to twenty five, so that it was necessary to rearrange the loads and leave some baggage behind. It was tied high in a tree, above the reach of elephants, to be collected again at some future date. We took with us seventy gantangs of rice, which accounted for twelve of the coolies, a quantity of dried fish, two canvas sheets for use as tents, two camp beds, pots and pans, bedding and clothing for ourselves and the others, and our food.

Meals were prepared for us by Ah San, who had three fowls, bread, twenty pounds of potatoes and onions, tins of meat, soup, bacon, sausages, fruit, peas, biscuits, milk, butter, and dripping, as his larder, from which were daily produced large and appetising meals. Mayah carried a twelve-bore shot-gun for protection against elephant and tiger, and a bag with a hammer for collecting geological specimens, and, needless to say, the hammer was more useful than the gun. One of the forest guards carried several wire presses containing Chinese paper for pressing botanical specimens.

When all was reorganised each coolie had to carry about forty pounds, packed in a *rotan umbong*, tied to his back by a strap over each shoulder, with an extra loose one for occasional additional support, passing round his forehead. It may be interesting here to mention that the rate of pay was 70 cents a day, from which the cost of food was deducted, a lower rate than was paid by Mr. Barnes in 1900, for he gave them food in addition, and it was very well earned! The Malay may be a lazy, idle fellow in certain civilised walks of life, but he is very willing and hard-working in the jungle.

At about noon our complete party recommenced the journey eastwards, having now said "good-bye" to known tracks and clearings. The three miles already traversed from Pintu Padang, at the 36th mile on the road from Kuala Lipis to Raub, had lain across the Gali plain, flat *kampung* land, overlooked by several limestone hills, Bukit Serdam and others, and from it had been seen the long ridge running north and south from the Sungai Dong to the Bilut Forest Reserve. We knew, from the topographical survey map (3 B, 4), and from E. J. Strugnell's previous trip, that the Sungai Kéluau flowed along the eastern side of this ridge, and the saddle between Bukit Redan and Bukit Kluang, which gave the easiest access to the river, could be seen on a bearing of 110 degrees, so, by using a compass, there was no difficulty in ensuring the right direction to reach our first camp (Plate V).

Almost at once, after entering the jungle, we passed from the alluvial plain overlying limestone on to low hills of mica-schist, and then, at *Jenut Kēladi*, the first salt-lick, on to fine-grained hornblende-granite and augite-syenite. Tracks of elephant and *sēladang* were very common, and big grooves had been gouged in the sides of mounds of earth by elephants' tusks. No animals were near as our party passed through this district of salt-licks, but, on the occasion of E. J. Strugnell's previous visit, he had found it wise to make a deviation to avoid a herd of *sēladang*. The animal-haunted jungle around the salt-licks was a mass of climbers, with very few forest trees, and this poor forest continued to the top of the ridge. From the saddle a rather indistinct path was followed southeast to the Sungai Kēlau, where at 4.30 p.m. we made our camp at a height of 550 feet.

The next day, May 20th, we set off at 7 a.m., following the Sungai Kēlau upstream until a large tributary was met, flowing from northeast to southwest. It is named the Sungai Kēlau on the topo map (3B 4), but the Malays of the district give this title to the other stream flowing from north to south. We continued northeast up the tributary, and then left it to go east up a ridge 2,300 feet in height. At 8.30 a.m., at 1,000 feet, (near the S. of S. Kēlau on the topo map, the bedrock was granite of the common, dark, hornblende-bearing type, without prominent feldspar crystals, and the soil was yellow-red in colour. A little further uphill was country built of augite-syenite, with abundant, rectangular-shaped crystals of feldspar showing a roughly parallel arrangement, and the soil was brown, quite different from that lying on the granite.

At 9.45 a.m. we came to an extensive *runtoh* (landslide), and, from the huge, freshly-split boulders, it was possible to determine the age of the various granite rocks relative to that of the syenite. Oldest is syenite. This is intruded by black syenitic vein-rocks, and both are penetrated by hornblende-granite.

We reached the top of the *permatang* (ridge), which had a north and south direction, and went down to a brawling stream, flowing over boulders and outcrops of syenite. Uphill, on the other side, after altogether two miles of syenite, the red soil of ordinary granite (not hornblende-bearing) appeared, which continued up to the highest part of Gunong Bēnom and for some distance down the other side. Our party went eastwards to the top of the ridge at 3,000 feet, and then descended to 2,500 feet, where, at 2.45 p.m., our second camp was pitched alongside a small stream.

We started at 7 a.m. on the third day, May 21st, going eastwards up the flank of the next ridge by ascending a spur. At the top the ridge led east, and, after following it till 9.20 a.m., at 4,300 feet, we left it to descend to a stream flowing north at 3,500 feet. The bed of the valley was covered with large granite core-boulders, difficult to cross, especially for the coolies. These masses of core-boulders at the bottoms of valleys, known to the Malays

as *gugup*, are typical of Běnom. In a pool of water near here it was interesting to find a crab two inches across. At 10.30 a.m. we cut eastwards across the valley, climbing a spur which brought us, at 2 p.m. to the top of a ridge 5,500 feet high, whence the summit of Běnom could be seen on a bearing of 68 degrees. This 2,000 foot climb was the longest continuous rise of the whole ascent. On the ridge were fresh tracks of rhinoceros (*badak sumbu*).

At this stage the experience gained by E. J. Strugnell on his previous trip was invaluable. He had reached the same point, and, after a long search, had found water in a valley, 800 feet below, at the foot of a huge landslide, where he had made his highest camping-place. It was an uncomfortable spot to spend the night in, a difficult climb-down for the coolies with their loads, and the thought that the ascent up the same landslide would have to be made next morning was rather depressing, but still it was a definite gain to be able to pitch our tents at 4 p.m. without having had to tire ourselves further by a long search for water. A spring emerged from the landslide and trickled down for only a few yards before disappearing below *gugup* once more.

Some excavating and banking had to be done to make a site for our tent, and the others of the party all had very steep slopes to lie on. Luckily, on this, as on other nights, there was no shortage of leaves for *atap*, which was fortunate, because it began to rain as darkness fell. It was very unpleasant paddling about in the mud, and difficult to get wood dry enough to burn for cooking the evening meal, for we were here near the mossy forest. However, there was reason to bless the rain, when, next afternoon, pools of rain-water were the only means of cooking rice. But for them, most of our party would have gone without supper and breakfast. The night was uncomfortable, and three of the coolies deserted their dripping leaf-shelter to sleep under a huge rock, which certainly gave better protection from the rain, but nevertheless was a much colder and more draughty refuge than their leaky *pondok*. It was indeed a cold camp: the chilly night-air flowing down the landslide into the narrow valley kept most of the Malays awake, and some were coughing the night long.

On May 22nd, the fourth day, we got off at 7.40 a.m, and had regained our position on the ridge at 8.15 a.m., to go northeast along a well-trodden rhinoceros-track. A parallel ridge, 5,700 to 6,000 feet high, could be seen about a mile away. At 9.40 a.m. we were on a minor peak, 5,700 feet high, where boulders of the usual coarse-grained, non-porphyrific granite were common, and a peak of about 6,500 feet could be seen over a mile to the northeast, with others in clouds, evidently including the summit of Benom, to the east of it. At 10.30 a.m. we had attained 6,000 feet, still following the very useful rhinoceros-track, and then trouble began: for, at 11 a.m., the track was lost in very difficult *gugup*, flung right across the ridge, and an hour's delay ensued. Great boulders of granite, twenty, thirty, and forty feet across, lay one on top of an

other, with dangerous, deep chasms between, that yawned to receive the unwary. After various attempts to find a route amongst the rocks, it was found necessary to descend some distance below the crest of the ridge, to cut a laborious passage around and below them. We attained the ridge again, and went along it to 6,500 feet, where there was a view, through the clouds, of the beacon at the top, bearing 80 degrees. To our astonishment, there were still fresh tracks of rhinoceros, which made us wonder if, after all, a feasible route did pass through the *gugup*, for no sign of a track had been seen below it. At 1 p.m. we descended a little until a saddle was reached with a steep fall on either side.

It was important to find water, and a party was therefore sent down each side, ourselves following the ridge still further and then going down its north flank to make a more extended search. About four hundred feet below, were three small pools of rain-water coloured with peat, and though, lower down in the valley a stream could be heard flowing at a depth of some twenty feet below granite boulders, yet there was no means of getting at it, so we returned to the ridge-top, only, however, to learn that the other parties had had no success at all. We therefore had to make the best of a bad job, and we camped by the now-precious pools. A relieving feature was the presence of plenty of a species of *Pinanga*, which was used as atap by the coolies.

In the misty air of the mossy forest all dead wood is sodden, very reluctant to burn, so for many nights it was impossible to have a camp-fire for drying clothes, and useless, therefore, to wash them. One of the writers wore the same clothes for six days, and as we were continually falling about, they soon became stiff with clay and dirt. In spite of our great exertions we did not perspire in the cool air of these altitudes, and the dirty clothes were not so repeling as they might have been. On every night, except this one, a bathe was practicable by using a mug to bale water from the tiny streams by the side of which we camped; the cold water was a rare stimulant!

The fifth day dawned bright and sunny, conditions that seemed favourable for a view from the summit, and we set off at 7.30 a.m. hoping to reach the top by 9 a.m. Běnom has twin summits about 200 yards apart, and, although we reached the first one by the appointed time, yet it was an hour before we could find a way across the ravine filled with granite boulders which lay between the two, and on our arrival at the beacon, clouds prevented all but a few glimpses of the surrounding country. This lack of a view caused several days of very hard work in coming down the eastern side.

At the top the barometric pressure was only 23 inches.

After waiting about an hour in the vain hope of the clouds lifting, an hour fully occupied in the collection of botanical specimens, at 11.30 a.m. we started the descent southeast, following an old rentis, but, unfortunately, after passing the abandoned camp

of a previous party, all signs of a track were lost. We went down a tiny stream which had selected its channel along a porphyry-vein intrusive in the granite, bearing south-east, and nine hundred feet were dropped very quickly, with much scrambling over boulders. At 1.15 p.m. a camp was made at 6,000 feet.

The night-draught, accentuated by the narrowness of the valley, made the spot even colder than the previous night at a higher altitude, but in neither case was the cold unusually severe. Again everything was saturated with water, and no camp-fire could be made.

On May 24th, the sixth day, we started at 7.50 a.m., continuing down the small stream, in direction 100 degrees. It was thought that we were now in the head-waters of the Sungai Lompat, but really we were in the valley of the Sungai Terbau, two rivers further to the north (see map), though three days were to pass before the mistake was discovered. Progress was increasingly difficult as the stream became more and more precipitous, and at 8.45 a.m., at 5,500 feet, a landslide decided us to climb up the steep northern valley-side, to look for a ridge leading in the right direction. We had no success, for the ridge did not exist, so we came down again to the stream. However, after following it for a short distance, we once more found ourselves at the top of a waterfall, which this time was quite impassable.

A line was therefore cut east south-east, and later south south-east, along the slopes of the right (southern) valley-side, following the 5,500 foot contour until it brought us to the top of the ridge, where, to our extreme satisfaction, at 11.30 a.m., we found an ill-defined game-track, running through a peculiar, stunted, ridge-forest, which made a great difference to our comfort and to our rate of progress. From here looking south-west a good view was obtained of a north and south spur leading up to a north-west by southeast range about 6,000 feet high; two miles south-east was a mountain 5,000 feet high.

Our journey was continued south-east until one p.m. when the ridge died out at 3,700 feet. After a council of war, during which our mid-day meal was eaten, we took an easterly line, and came to a rather large stream, flowing through, and in parts completely under, a mass of granite boulders. This we followed over extremely difficult country, until its junction with another river was reached at 3,000 feet. Here we were able to camp on fairly flat ground at 3.30 p.m.

Mat, one of the coolies, gave us a fright by not turning up until after 6 p.m., more than an hour after the last of the others had straggled in. We were much relieved when eventually he did appear, with nothing the matter but a swollen foot and the usual scratches from thorns. It must be admitted that our motives in applying a goodly dose of iodine to the wounds were not of the highest, in fact, they were distinctly vindictive. Our feelings had

further been harrowed by a cloud of sandflies whose wholehearted enthusiasm for food was checked by nothing until a blazing camp-fire had been lit. They covered our soup with a brown film of their scalded corpses; they fell into the gravy, and still thousands were left to bite us with ever-increasing ferocity. Not until the fire had burnt up was there any relief, but then they disappeared entirely from our ken, and equanimity was restored. This day had been extremely tiring, and all were beginning to feel the accumulated effect of the exertions of the previous days, so it was cheering to lie down in more comfortable surroundings than had been enjoyed since our first camp on the Sungai Kélau. The noise of the stream was a good soporific.

On May 25th, the seventh day, we set off at 8 a.m., the latest start of the trip. As the going was so difficult along the stream, which was here a succession of waterfalls, with intervening stretches blocked by boulders and fallen trees, we climbed 800 feet to the ridge-top on the north side, in the hope of finding a convenient game-track descending eastwards. At 8.45 a.m. we reached the top and went east till 10 a.m., when both the ridge and the track died out at 3,400 feet, and we recommenced climbing and descending the spurs of the granite mountain.

At 11.30 a.m. we came to a contact of granite with fine-grained metamorphosed sediment at 2,600 feet, and noticed a remarkable phenomenon, that it coincided with the margin of a wide-spread windblow which extended along the steep ridge-side for an hour's travel. Many large trees had fallen, leaving nothing but shrubs and small trees standing; the slope was covered with prostrate trunks, *bělukar*, wild bananas and *bemban*. The destruction had not been caused by a landslide, for the soil was preserved intact. A hurricane or whirlwind had struck the mountain-side, and the depth of soil on the sedimentary rock was insufficient to provide a firm enough hold for the tree roots.

At 12.30 p.m. we came to a still larger tributary of the Terbau, and made our camp in a suitable spot at 1,700 feet. The stream-bed was very precipitous, with one waterfall leading to the next, but there were delightful, deep pools which made excellent bathing-places and, as camp had been pitched earlier than usual, it was possible at long last to get our filthy clothes washed and dried.

Next day we made a start at 7.30 a.m. going east or eastnorth-east along the flank of a hill of the same altered sedimentary rock or schist, on the northern side of our mountain torrent. It was a banded rock, fine-grained in texture, the product of intense heat-metamorphism on deposits of mud and fine sand. There were also abundant boulders of coarse-grained volcanic conglomerate, which had been converted to a very hard rigid rock by the same metamorphism.

At 8.40 a.m. we came to a contact of fine-grained granite with banded schist, and, five minutes later, the main stream of the Sungai

Terbau was reached, just below the mouth of the tributary on which we had camped the previous night. Granite was here *in situ*. We continued east downstream, passing exposures of banded schist dipping at a low angle (10 to 20 degrees) towards eastnortheast, and noted that boulders of volcanic conglomerate too were common.

At 11 a.m. we photographed the same banded schist dipping 30 degrees towards the eastnortheast (Plate VI) Boulders of granitic vein-rock were abundant, and their origin became evident when, at 11.30 a.m., a dyke of the rock was found intrusive into the schist (Plate VII).

At this spot there were big fish in the river, *kělak*, *sěbarau*, and others, more than two feet in length, and the stream had now become broad enough to cause a gap in the jungle through which the sunlight could penetrate. It was pleasant to spend an hour here, if only to get thoroughly warm in the sun. One of us was so interested in matters piscatorial and geological that he did not notice that he had become the centre of attraction for a few hundred bees, and only when two of them found their way under his vest did he really become conscious of their attentions. Luckily they were good-tempered, though a little later one of the Malays was stung.

Five minutes below we came to a great landslide, a consequence of the great floods of 1926, and saw that the *débris* from it had originally dammed back the river, drowning quite a number of tall trees. By this time the stream had cut through the dam, forming a channel with steep banks of red earth, twenty feet high. Banded schist could be seen *in situ* high up on the hill-side, and the landslide had brought down huge, freshly-broken boulders of hard, unweathered volcanic tuff, which is probably here interbedded with the schist. There were many boulders of the volcanic-conglomerate in the river. Further downstream great boulders of granite were seen lying on exposures of schist, indicating that granite is *in situ* higher up the valley-sides. It is likely that there was a trough-shaped depression in the original surface of contact of granite and schist, and that, when severe erosion had laid bare the granite, a tongue of schist penetrating into the granite was exposed. As is common elsewhere in Malaya, the stream elected to follow this tongue of sedimentary rock.

At 2.45 p.m. we camped at 500 feet and noted that the schist had now a steeper dip.

On May 27th, the ninth day, two hours' walk through an extensive area of flat land brought us to a Sakai kampong at Kuala Terbau, where we learnt for the first time that our party had followed the Terbau and not the Lompat. The Sakai here grow padi and own *kerbau* (buffaloes), and have such a permanent-looking settlement that they seem to have given up their wandering habits. A range about 1,500 feet high, one mile northeast from Kuala Terbau, showed a cliff-exposure of what appeared to be banded schist.

We followed the Sungai Kērau all morning, through riverside jungle and old *ladang* (clearings), until we halted to camp near Kuala Lompat at 1 p.m., on low banks of weathered quartzite and shale. Our rice-supplies were almost finished and none could be spared for the Sakai of the neighbourhood, who were anxious to get some. They sold us some two hundred head of *jagong* (maize), of which they had a large quantity.

From this camp, three hours' walk the next day brought us, through well-cultivated Malay kampongs, to the railway-station at Kuala Krau.

GEOLOGY.

The rocks forming the country traversed have already been described in the preceding account, and the results will now be summarised.

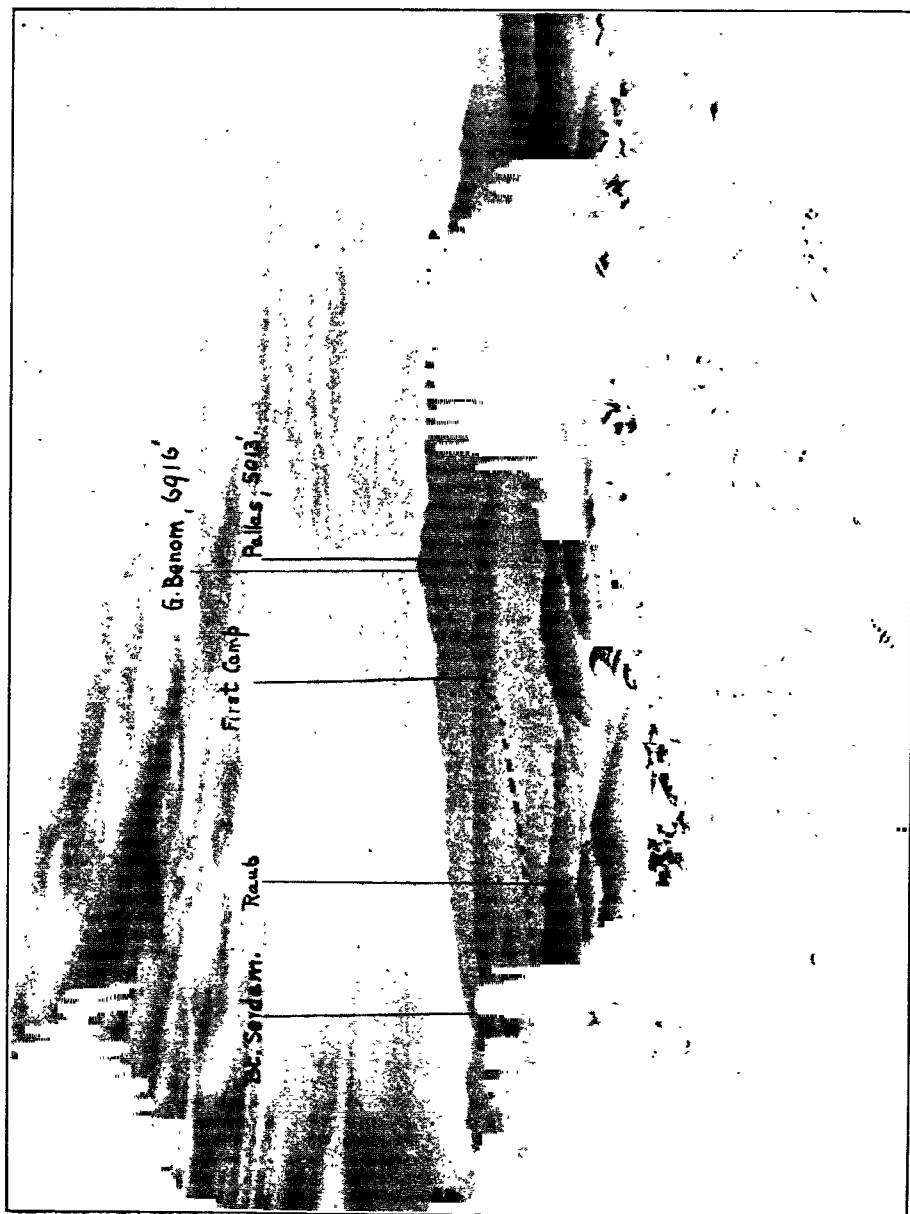
Syenite, augite-syenite, and hornblende-granite are common in a north-and-south belt, two miles wide, between 1,200 feet and 2,500 feet on the western slopes of Bēnom. While these rocks are intruded by granite, yet it is probable that the granite is of the same general age.

Further up the mountain, ordinary granite without hornblende is the country-rock, extending to the summit and down the other side until a deposit of banded schist, (sedimentary rocks and volcanic rocks which have been altered by the granite), is met at 2,600 feet. The Sungai Krau flows over flat land on the east side of the mountain, where infrequent exposures indicate that the country is built of quartzite and shale, interbedded with volcanic lava and tuff, all intruded by small granite-masses.

Concentrates washed from the syenitic rocks on the west side of the mountain are rich in magnetite and zircon. No tourmaline or other minerals commonly associated with tin-ore were seen, and no minerals of economic importance were detected.

VEGETATION.

From a forestry point of view, the jungle above 600 feet on the Raub side and 2,000 feet on the Krau side is generally poor. A little *merbau* was found near streams below this altitude on the Raub side, and *chengal* was seen in isolated patches on the eastern slopes of Bēnom up to 3,000 feet. It seems possible that *chengal* occurs in this manner all over the lower slopes of Bēnom, but not in large quantities. The pooriness of the surrounding jungle is characteristic; it is common with *chengal* in Pahang, that, where this species is found, there is very little else of value. The altitude 3,000 feet is much higher than that of 1,800 feet given by Foxworthy in Malayan Forest Records No. 3, though the average maximum height of *chengal* is about that mentioned by him. *Chengal* has also been recorded at 3,000 feet in Senaling Inas, Negri Sembilan. It seems possible that these isolated occurrences of *chengal* at comparatively high altitudes are relics of the time, estimated at 10,000 years, or more, ago, when it was forced to such high positions by the sub-



A view of Gunung Benom from Paninjau, Fraser's Hill. The dotted line indicates the route from Pintu Padang to the summit.



*Banded schist, derived from the metamorphism of volcanic mud, in Ulu Sungai Terbau,
dipping at an angle of 30°.*



A dyke of porphyry, intrusive into banded schist, Ulu Sungai Terbau.



Mossy forest at 6,000 feet, west of the summit of Gunung Benom.

mergence of the Peninsula in the sea. There are indications that the species is one of the longest lived of our trees, and that in the period mentioned *chengal* would run through only twenty or more generations, so that the age of this unique species must certainly be much greater than the time which has elapsed since the submergence of the Peninsula.

Seraya was met with up to 4,000 feet on both sides of the mountain. It is certain that, at least so far as Raub district is concerned, this name covers other species of the *Dipterocarpaceae* than *Shorea Curtisii*, whose range does not extend above 3,000 feet.

The hill-jungle, of which *Shorea Curtisii*, with its associated undergrowth of *bertam*, *Eugissona triste*, is a characteristic representative, gave way to the mountain type in which the *Dacrydiums* appear at about 3,800 feet. True mossy forest was found above 5,750 feet (Plate VIII). In this type large trees are absent, none being more than about a foot in diameter. The stems of the very numerous small trees and saplings are swollen to two and three times their true diameter by a thick coating of moss, which is saturated with moisture as is the atmosphere and everything else inside the jungle here.

The statement attributed to I. H. N. Evans by M. R. Henderson (Jour. F. M. S. Mus. Vol. XIII., Pt. 4, Aug. 1927, pp. 217-227), that the whole of the top of Benom, from about 5,000 feet, is covered with low scrubby growth is hardly correct. Although the ridges above 6,500 feet bear a shrubby vegetation which does not exceed fifteen feet in height, yet, once off the ridge tops, the trees immediately become taller. In the sheltered valley where we camped at 6,400 feet, the trees were from forty to sixty feet high.

The ridge-vegetation in the mossy forest is dominated by *Dacrydium elatum* and *Leucopogon malayanum*, with numerous orchids and many species of moss and lichen. Lower down the Krau slopes the *Dacrydium* grows to large sizes. *Damar minyak* (*Agathis alba*) was not seen on the Raub side, but was common on the Krau side at about 3,000 feet.

In the Terbau valley, *keruing* (*Dipterocarpus* spp.), *meranti* (*Shorea* spp.), and *jelutong* (*Dyera* spp.) were common from 1,500 feet downwards. Except for a little rotan working by the Sakai, there was no sign of any working of jungle-produce until the boundary of the Krau Game Reserve was reached.

LIST OF HERBARIUM SPECIMENS.

I am indebted to Mr. Symington of the Forest Research Institute, Kepong, and Mr. M. R. Henderson, of the Botanic Gardens, Singapore for the following remarks and identifications.

VIOLACEAE

22464 *Alsodeia Wallichiana* Hf.

TERNSTROEMIAEAE

22336 *Anneslea crassipes* Hf. 6916 ft.

22331 *Pentaphylax malayana* Ridl. 6916 ft.

OCHNACEAE

- 22466 *Gomphia oblongifolia* Ridl.

OLACINEAE

- 22350 cf. *Gomphandra affinis* Mast. 5500 ft.

ROSACEAE

- 22318 *Pygeum* sp. Probably a new species; it will not match anything at the Singapore Herbarium. 5600 ft.

COMBRETACEAE

- 22474 *Quisqualis indica* L.

MYRTACEAE

- 22334 *Leptospermum flavescens* Sm. 6916 ft.

- 22335 *Eugenia Wrayi* King. 6916 ft.

MELASTOMACEAE

- 22457 *Blastus Cogniauxii* Staph. 4000 ft.

- 22316 *Medinilla Clarkei* King. 5600 ft.

ing in the nature of the stamens. 6500 ft.

- 22472 *Memecylon garcinioides* Bl.

- 22460 *Pachycentria tuberculata* Korth.

- 22471 *Phyllagathis Griffithii* King.

- 22320 *Oritrephes Robinsonii* Ridl. 5700 ft.

- 22453 *Sonerila picta* var. *concolor* Ridl. 4000 ft.

RUBIACEAE

- 22342 *Argostemma nigrum* Hend. The only previous specimen is the type in the Singapore Herbarium. 6916 ft.

- 22349 *Argostemma* sp. This is almost certainly new. The only other collection in the Singapore herbarium resembling this is an unidentified plant collected by Holttum at Brastagi. 5500 ft.

- 22463 *Ixora stricta* Roxb.

- 22468 *Mussaenda oblonga* King.

- 22461 *Pavetta indica* L.

- 22469 *Uncaria sclerophylla* Roxb.

VACCINIACEAE

- 22315 *Vaccinium longibracteatum* Ridl. 5400 ft.

- 22345 *Vaccinium perakense* Ridl. 6916 ft.

ERICACEAE

- 22344 *Rhododendron* sp. This is near *R. longiflorum*, but is distinct from it and from anything else in the Singapore herbarium. 6916 ft.

EPACRIDAEAE

- 22322 *Leucopogon malayanus* Jack. 6000 ft.

MYRSINEAE

- 22332 *Ardisia benomensis* Hend. The only previous collection is the type specimen. 6916 ft.

- 22473 *Ardisia* aff. *A. Virens* Kurz.

- 22347 *Ardisia* sp. Possibly new; it is unmatchable at the Singapore herbarium. 5500 ft.

- 22326 *Embelia rugosa* Ridl. 6916 ft.

- 22458 *Labisia pothoina* var. *alata* Lindl. 4500 ft.

STYRACEAE

- 22337 *Cordyloblaste pulcherrima* Ridl. 6916 ft.

APOCYNACEAE

- 22462 *Ervatamia cylindrocarpa* K. & G.

LOGANIACEAE

- 22456 *Gaertnera acuminata* Benth. var. *montana* Ridl. 5000 ft.

NEPENTHACEAE

- 22311 *Nepenthes sanguinea* Lindl. 5500 ft.

BALANOPHORACEAE

- 22346 *Balanophora globosa* Jungh. 5500 ft.

EUPHORBIACEAE

- 22465 *Alchornea villosa* Muell.
22470 *Antidesma salicinum* Ridl.

MORACEAE

- 22341 *Ficus variolosa* Bl. 6916 ft.
22452 *Ficus pyriformis* Hook. var. *angustifolia*. 3000 ft.

ORCHIDACEAE

- 22329 *Coelogyne carnea* Hf. 6916 ft.
22327 *Crinonia parviflora* Pfitger. 6916 ft.
22319 *Dendrobium angustifolium* Ridl. 5600 ft.
22310 *Dendrobium cornutum* Hf. 5400 ft.
22323 *Eria Scortechinii* Hf. 6000 ft.
22328 *Platyclinis gracilis* Hf. 6916 ft.
22324 *Sarcopodium longipes* Kranzl. 6500 ft.

LILIACEAE

- 22451 *Dracaena* sp. Near *D. umbratica*: possibly new.
5000 ft.

BURMANNIACEAE

- 22313 *Burmannia longifolia* Becc. 5300 ft.

CYPERACEAE

- 22343 *Gahnia javanica* Moritz. 6916 ft.

CONIFERAE

- 22321 *Dacrydium elatum* Wall. 5700 ft.

LYCOPODIACEAE

- 22454 *Lycopodium phlegmaris*. 4000 ft.
22455 *Lycopodium casuarinoides* Spreng. 5000 ft.

FERNS

- 22467 *Antrophyum reticulatum* Forst. Klf.
22459 *Dipteris Lobbiana* Moore. 3000 ft.

LIVERWORT

- 22314 *Hymenophyllum Blumeianum* Spr. 5300 ft.

The numbers given are those of the Forest Research Institute Herbarium at Kepong, Selangor. Where no height is given, the species is a lowland form collected on the foot-hills.

MAHMUD II and ABDUL JALIL III.

1685—1720 A.D.

By R. J. WILKINSON, C.M.G.

Although the reigns of these two kings represent a dark page of Malay History they are of special interest because we can trace to them the origin of five Malay dynasties; Lingga, Singapore, Trengganu, Pahang and Johore.

The principal authorities for this period are: (i) Netscher, "De Nederlanders in Djohor en Siak"; (ii) a Bugis History, of which the Malay text was published at Singapore in A. H. 1329 (*Silasila Melayu dan Bugis*), and its English version, slightly abridged, by Mr. Hans Overbeck in the Malayan Society's Journal, December, 1926; and (iii) a Malay or anti-Bugis History, the Hikayat Johor, still unpublished, in the Batavian Society's library at Weltevreden.

Mahmud II was the son of Sultan Ibrahim of Johor and Pahang by a daughter of the *laksamana*, feudal lord of Bentan. Sultan Ibrahim died on the 10th February, 1685, having been predeceased by the *laksamana*, his father-in-law. During Sultan Mahmud's minority the government was administered at first by a *Dato' Paduka Raja*—not a *Bendahara Paduka Raja* as stated in the works of Netscher and Rouffaer and in my own history. This *Dato' Paduka* died in A.D. 1788. His name takes precedence of that of the *Bendahara Seri Maharaja* of his time on a letter of protest sent to the Dutch Government in May, 1685 (Netscher, App., p. viii). The explanation is that he was *bin laksamana*, the Queen-Mother's brother, uncle and natural guardian of the young king. When the *Dato' Paduka* died in 1688 A.D. the *Bendahara* became *ex-officio* regent and took precedence of all Malay Chiefs in the treaty of 1689 A.D. (Netscher App., p. viii). One result of the change was a prompt move from Riau (the *Dato' Paduka's* domain) to the older capital at Makam Tauhid. The Court was there in 1689 A.D.

Sultan Mahmud was not "Sultan Mahmud" at all. He was styled Sultan Abdul-jalil and is so named in the Johor History and in the Treaty of 1689 A.D. But he is called Sultan Mahmud by the Bugis History, Netscher and Rouffaer; so "Sultan Mahmud" he is likely to remain.

The *Bendahara Sri Maharaja* died at some date between 1689 and 1699. His name was Abdul-majid and he is almost certainly the *Bendahara Padang Saujana* buried at Kota Tinggi. He was succeeded as *Bendahara* (*Paduka Raja*) by his son Abdul-jalil cf: in the Johor history *Mégar Seri Rama pun pèrgi mēndapatkan Bēndahara Paduka Raja*.

Of Sultan Mahmud's character the less said the better. But as the *Hikayat Johor* (which champions him) has never been published it is only right to give its defence of him as well as its explanation of the wrong that he did to *Mégar Sri Rama*. Briefly "he was under the influence of the moon," i.e., a lunatic.

Journal Malayan Branch [Vol. IX, pt. I.

Baginda tiada boleh bēristēri karna bērbhinikan pēri; tiada di-pēdulikan kērajaan, pulang kapada bēndihara mēmēgang pērentah nēgēri; akan baginda itu gila dēngan bini pēri itu. Dan jika baginda mēlihat pērēmpuan yang baik rupa-nya datang-lah bēnchi sahuja sēbab pēri itu dēkat baginda.

Kapada suatu hari Sultan Abdul-jalil Shah bēradu siang hari. Maka datang orang pērsēmbah nangka; dan kapada waktu itu bini Mēgat Sēri Rama masok ka-dalam karna ia bunting tujuh bulan. Sērtā di-lihat nangka itu tērlalu-lah ingin hēndak makan nangka itu tiada dapat takani rasa-nya. Maka bini Mēgat Sēri Rama pun datang-lah mēndapatkan pēnghulu istana minta nangka barang satu ulas. Maka fikir pēnghulu istana dari sēbab ia bunting-lah maka sangat bērkēhēndak ini. Maka lalu di-ambilkannya satu ulas; maka di-makan-nya-lah. Sa-tēlah sudah maka baginda-pun bangun dari bēradu. Maka sēgala pēnjawat-pun datang mēmbawakan ayer basoh muka, lalu sēmayam di-atas pētērana, lalu tērlihat kapada nangka, lalu baginda suroh ambil. Maka pēnghulu istana pun datang mēmbawakan nangka, lalu di-pērsēmbahkan-nya mēngambil satu ulas mēmbēri bini Mēgat Sēri Rama karna ia mēngidam hēndak makan nangka. Tatkala itu baginda didalam tiada ingat kapada waktu bulan baharu timbul. Sa-tēlah baginda mēndēngar sēmbah pēnghulu istana maka baginda pun tērtawa; titah baginda suroh-lah panggil bini Mēgat Sēri Rama itu. "Aku hēndak mēlihat anak-nya, ia-kah yang makan nangka itu." Maka di-panggil-lah bini Mēgat Sēri Rama itu, maka ia-pun datang. Maka lalu di-bēlah pērut-nya; dan anak yang didalam pērut itu mēngisap nangka. Maka bini Mēgat Sēri Rama pun mati.

We will pass over the story of his assassination. According to Hamilton a Malay noble "passed a long lance through his heart and so made an end of the beast." According to the Johor Annals Megat Sri Rama cut his head open with a machete (*purang*). It matters little how he died. He was killed in August, 1699, at Kota Tinggi when mounted on the shoulders of one of his followers.-whence his posthumous names, *Mangkat di-julang* and *Marhum Kota Tinggi*.

He was succeeded on the 3rd September, 1699, by his Bendahara Abdul-jalil, not by virtue of any relationship (as is sometimes claimed by the Bendahara's descendants) but ex-officio. The Bugis History says, "It is the custom that if a ruling house dies out kingship goes to the Bendahara" (Overbeck, p. 348). When a King dies the Bendahara becomes regent till a successor is appointed; when there is no successor he becomes regent indefinitely, i.e. he takes the throne.

According to Hamilton who knew him personally Abdul-jalil was a religious bigot and a weak man, submissive in all things to a masterful younger brother. Abdul-jalil made that brother's title (*Raja Indēra Bongsu*) rank on a parity with those of his elders, the Bendahara and Temenggong. Even so he did not satisfy Tun

Mahmud; for as the Bugis history tells us. "Raja Indra Bongsu was made Yamtuan Muda" (Overbeck, p. 349). In 1715 the Yamtuan Muda signed a treaty with the Dutch the terms of which indicate his arrogance, the Sultan not being even mentioned (Netscher, App., p. xxiii).

On the 21st March 1717, what Hamilton calls "an army of Menacaboes" attacked and captured Johor. The Bugis Annals say that "Johor lost the fight for there was no harmony between the people and the nobles who had oppressed the people, altered old customs and done much wrong." This is quite likely. The leader of the Minangkabau "army" was one Raja Kechil, pirate-king of Siak, an adventurer of uncertain origin. Sultan Abdul-jalil fled to the East Coast where he met Capt. Hamilton at Trengganu in 1719. The Yamtuan Muda fell in the fighting. He was shot by Raja Kechil's men in a coppice and was known posthumously as *Marhum di-Kayu*.

Late in 1719 or early in 1720 a peace was patched up between Raja Kechil and Sultan Abdul-jalil on the understanding that the latter would give one of his daughters in marriage to the former. A royal marriage meant much to an adventurer like Raja Kechil, while Sultan Abdul-jalil was destitute and had everything to gain by peace. Sultan Abdul-jalil then went to Johor or Riau where Raja Kechil was. All would probably have gone well had the Raja married the Sultan's eldest daughter, *Tengku Tengah* or T. Erang, as first arranged; but he changed his mind afterwards and wanted to marry the youngest, *Tengku Kamariah*, instead. This was agreed to; but it gave great offence to *Tengku Erang* and her friends, causing tongues to wag and questions to be asked regarding the genuineness of Raja Kechil's claims to be a prince. In the end the ladies decided that the Raja was not a fit and proper husband for a young princess like *Kamariah*. But how break off the engagement? They were all in Raja Kechil's power. The old Sultan and his women and children decided to flee away back to the East Coast. They were caught off *Kuala Pahang*: the Sultan was killed; and the women and children taken to Riau where Raja Kechil married *Tengku Kamariah* by force. Such, at least, is my reading of an episode on which the Bugis and Malay stories disagree hopelessly in detail.

In a passage left untranslated by Mr. Overbeck the Bugis History (p. 21) says that Sultan Abdul-jalil reigned 22 (lunar) years of which 19 were peaceful. This tallies exactly with the facts that have been given above though not with the confused account in the History itself which makes only one episode of the attack on Johor (A.D. 1717) and the flight of Abdul-jalil and his daughters (A.D. 1720). The three troubled years were the interval.

Sultan Abdul-jalil is known as *Marhum Kuala Pahang*. His death ends the reigns under discussion; but the real interest of the reigns is genealogical. Who were the founders of the five dynasties first mentioned?

The first two dynasties give no trouble; they are in history. Sultan Abdul-jalil's son became Sultan in 1722 under the title of Sultan Sulaiman Badr-al-a'am Shah. He is known as *Marhum mangkat di-Batangan* and died on the 20th August, 1760. Before his death he had raised his son Abdul-Jalil (*Tengku Bêsar* and *Raja di-Baroh*) to royal rank as regent so that Abdul-jalil, though never installed as his father's successor, was a Sultan at the time of his death in January, 1761, and should count as such. From that date the genealogy is not in dispute. A list of the Sultans (omitting the Tengku Besar Abdul-jalil) is given by Rouffaer (p. 600), "Was Malaka Emporium voor 1400 A.D. genaamd Malajoer?"

The story of the Trengganu Sultans is less certain. Our authorities are: (i) a few statements of Netscher; (ii) a table of Sultans given by Sir John Bucknill in this Journal (April 1925; pp. 196, 197); and (iii) a short history of Trengganu in another number of this Journal (May, 1916). From the last we learn that the first Sultan was Zainulabidin bin Abdul-majid, *i.e.* he was a brother of our Sultan Abdul-jalil. By Netscher we are told that "according to native sources" he was installed as Sultan by Sulaiman Shah in A.D. 1725. Apart from that he seems to have made very little impression on history and is left unmentioned in both the Johor and Bugis Chronicles of his time. He died on the 7th March, 1733 (Netscher, p. 74, footnote).

He was succeeded by his son Tun Dalam or Raja Kêchil¹ who took the title of Mansur Shah and was unquestionably a remarkable man. He is known as *Marhum Bêsar* or "the Great." His personal name we do not know. He is almost certainly the *Yangdipertuan Kêchi* who was taken by Sultan Sulaiman from Trengganu to Riau in A.H. 1149 (1736 A.D.); he may be the "Raja Abdul-kadir" who was circumcised shortly afterwards (Overbeck, p. 380). He married Tengku Bulang, daughter of Sultan Sulaiman, in 1739. He reigned sixty years; according to Bucknill he reigned seventy-one years, but the dates given by Bucknill are more like those of his birth and death. I am inclined to think it possible that he was born even later than the date given by Bucknill for his accession; as it was then usual to count as royal only such sons as were born after their fathers' accession to the throne and in that event his date of birth would be about 1725 A.D. Sultan Mansur played a great part afterwards as head of the "Malay" (in contradistinction to the "Bugis") party at the Riau Court; and if his father-in-law, Sultan Sulaiman had not chosen of his own free-will to remain a *roi-jaincant* the history of Malaya might have been very different. But this is a digression. From Sultan Mansur onwards Bucknill's names of Sultans agree with those in Netscher though his dates do not always tally and no relationships are given. The following (partly from Netscher) may be of use for comparative purposes:

III. Zain-al-abedin II, son of Mansur, 1793-1808;

IV. Ahmad I, son of III, 1808-1827;

V. Abdul-rahman, son of III, 1827-1831;

- VI. Daud, son of IV, 1831, reigned for three weeks;
- VII. Mansur II, son of III, 1831-1836;
- VIII. Mohammed, son of VII, 1836-1839;
- IX. Omar, son of IV, 1839-1876;
- X. Ahmad II, son of IX, 1876-1881;
- XI. Zain-al-abedin III, son of X, 1881-1918.

The Bendaharas—afterwards Sultans—of Pahang are still harder to trace. Our authorities are: (i) the Bugis History, (ii) the Hikayat Johor; (iii) a few statements in Netscher and titles mentioned in treaties given in his appendices; (iv) the “official” genealogy of the Bendaharas published (with some valuable notes) by Mr. Linehan in this Journal for December, 1926; (v) the “official” genealogy of the Temenggongs of Johor, given in my History, 3rd Edition, p. 82; and (vi) a genealogy given me in Singapore by a Malay with some inner knowledge of the facts. This last genealogy was looted by the Turks in 1922; what they wanted it for, I cannot guess; but it had served as the basis of the genealogy given on page 83 of the third edition of my History. One source of inference may be added. It was usual at that time for a Temenggong to succeed a Bendahara and for a Paduka Raja to follow a Sri Maharaja. I put the results of such inferences in brackets.

The following is my list of the Bendaharas after the accession of Sultan Abdul-jalil in A.D. 1699.

I. Bendahara Sri Maharaja Tun Mas Anom, brother of Sultan Abdul-jalil. He is mentioned in the Bugis History (Overbeck p. 349), “Temenggong Abdullah was made Bendahara to replace Tun Mas Anom who had died.” His title (Sri Maharaja) appears on the seal of the Dato¹ of Rembau (1708 A.D.) and in a treaty of A.D. 1715 with the Dutch (Netscher, App., p. xxiii).

II. Bendahara (Paduka Raja) Tun Abdullah, brother of Sultan Abdul-jalil. We are told in the Bugis History (Overbeck, p. 349) that Johor was destroyed in Bendahara Abdullah’s time. The date of the fall of Johor is March 1717.

III. Bendahara Sri Maharaja Tun Hussain, eldest son of Sultan Abdul-jalil. He was born before his father succeeded to the throne and was ruled ineligible for the Sultanate as he was not an *anak di-dalam* or “born in the purple”; but he claimed the throne (Overbeck, p. 350) and is mentioned as a brother (*saudara*) of Sultan Sulaiman in the Johor History also. His title (Sri Maharaja) appears in the Dutch Treaty of A.D. 1734. He is called the Bendahara Pekok or Pegoh in both histories. The Johor history says of Sultan Abdul-jalil, *Waktu ia lagi mēnjadi bēndahara bēranak sa-orang, itu-lah di-judikan bēndahara di-Pahang dan itu-lah kēturunan bēndahara Pahang yang ada sēkarang ini*. This is categorical enough; but it is just possible that he is confused with his brother Mutahir (Tahir) from whom the Pahang Sultans are avowedly descended, and of whom the statement would

also be true. The Bugis History is very confused about him. It represents Tun Hussain as disputing the throne with Sultan Abdul-jalil who was not an *anak di-dalam*, as the History suggests. The dispute was with the *anak di-dalam* Sultan Sulaiman.

IV. Bendahara (Puduka Raja) Tun Abdul-jalil, brother of Sultan Abdul-jalil. While Temenggong he gave his daughter in marriage to the first Yamtuan Muda; cf. Overbeck's Bugis History, p. 358; Netscher, p. 59. He would naturally succeed as Bendahara on his nephew's death; and we find him as Bendahara in the genealogy given in my History, third edition, p. 83. His daughter had been married in infancy to Sultan Mahmud (Netscher, p. 59); so he would not be of Tun Hussain's generation. He outlived Tun Husain but not for long.

V. Bendahara Sri Maharaja Tun Mutahir (Tahir), probably a son of Sultan Abdul-jalil. He figures in the genealogy on p. 83 of my History as Temenggong to Abdul-jamal; and we know (from Linehan) that he ruled as Bendahara in Pahang where his grave is shown. He figures as "Sri Maharaja" in the Dutch Treaty of 1756 A.D. As his son married a daughter of Bendahara Husain I assume the two to be of the same generation, probably brothers.

VI. Bendahara Paduka Raja Tun Abdul-majid, son of Mutahir (v). Tun Abdul-majid is mentioned in the Bugis History (Overbeck, p. 380), "The Sultan married Tun Abdul-majid to the daughter of the Bendahara, Tun Inah,"—indicating that the parties to the marriage were very young at that time, *i.e.*, about 1736 A.D. In the Dutch agreement of the 12th December, 1757, we read of the "Datoë Temenggong Tun Abdul-majid." In 1770 he was Bendahara (Linehan). He installed Raja Haji, Yamtuan Muda of Riau, in 1778; and signed agreements with the Dutch in 1784 and 1787 (Netscher, App., pp. lix-lxx. Netscher (p. 107) speaks of him in 1760 (while he was still Temenggong) as Temenggong Puduka Raja which is what we should expect.

Tun Abdul-majid lived to a great age. He must have outlived his younger brother, Temenggong Abdul-jamal who should otherwise have succeeded as Bendahara. He was alive in February, 1802 (Netscher, p. 244).

From this time the Bendaharaship of Pahang separates from the Temenggongship of Johor; and the holders of the two offices are as shown in the official pedigrees. The "interregnum" to which Mr. Linehan alludes may have been due to the Temenggong—a Bugis—claiming to become Bendahara on the strength of the many precedents. For the rest of the Bendahara line Mr. Linehan's article should be consulted.

The line of the early Temenggongs may be deduced easily from that of the Bendaharas as each became Bendahara in his turn. It runs as follows:—

I. Temenggong (Paduka Raja) Tun Abdullah; afterwards Bendahara II.

II. (Temenggong) Sri Maharaja Tun Husain; afterwards Bendahara III.

III. Temenggong (Paduka Raja) Tun Abdul-jamal (Netscher, p. 59); afterwards Bendahara IV.

IV. Temenggong Sri Maharaja Tun Mutahir (History, p. 83); afterwards Bendahara V.

V. Temenggong Paduka Raja Tun Abdul-majid (Netscher, p. 107; Netscher, App., p. xxxiv); afterwards Bendahara VI.

The remaining Temenggongs are given in my "History," third edition, on p. 83.

No finality whatever is claimed for these lists and genealogies. Further evidence will come by degrees. All that is hoped from this article is that it may sum up what we know at present and so bring us a stage nearer the truth.

HIKAYAT SULTAN BUSTAMAM.

By H. OVERBECK.

In the introduction to my account of the "Hikayat Ganja Mara," published in vol. VI, part II, of this journal (June 1928), I mentioned that in one of the Malay bookshops I had found a copy of the "Hikayat Sultan Bustamam." Dr. Winstedt informed me that the Malays—as far as there are still Malays who read their own literature—treat this story with a certain veneration, and that a *Jampi* or incantation is read over it before the book is opened.

I have been unable to trace a manuscript of this Hikayat in the published catalogues of Malay MSS. Two lithographed editions are mentioned in the catalogue of the "Koloniale Bibliotheek" at the Hague, the one published in Penang A.H. 1312 (1895), and the other also in Penang A.H. 1317 (1900). My own copy is published in Singapore A.H. 1332. I have not seen the Penang editions, but from what I know of Malay publishers I assume that my edition is merely a third edition of the text published in Penang.

Dr. P. Voorhoeve kindly called my attention to the fact that Dr. C. Snouck-Hurgronje mentions a "Hikayat Sulutan Boseutaman" as belonging to Achehnese literature in his work "The Achehnese":—in vol. II, 143-155 (English Edition) a short account of the contents is given. The Achehnese story seems to be rather a "penglipoer-lara"—version of the original text. Dr. Snouck-Hurgronje gathered the material for his work mainly during the year 1892, and we may thus assume that the story was already widely known amongst the Malays before the Penang edition of 1895 (if that be the first edition) appeared.

In the Achehnese version, unless Dr. Snouck-Hurgronje left out in his account, which is hardly credible, the most important facts, there is not much to explain the veneration which the Malays show for this work. But it is otherwise with the complete story as published in the Straits Settlements. It is one of the legendary tales of the progress of Islam in India, exceedingly well written, though much of its original charm may have been lost in translating it into the Malay language. For it is not an original Malay story.

Both Penang editions, according to the catalogue of the Koloniale Bibliotheek, tell us something of the origin: "Ada-lah asal chëritëra-nya dengan bahasa Hindustan, di-obahkan oleh Dato' Saudagar Puteh.....kapada bahasa Jawi." (In my Singapore edition this information is omitted). But even without this information it is obvious that the "Hikayat Sultan Bustamam" must be of Indian origin. Leaving aside the Islamic basis, it is written by an author well versed in the "Nitisastra", the science of politics, of which the drama *Mudraraksasa* by Visakhadatta is the well-known paradigma. The author has not failed to underline the

sagacity of the viziers, who knew how to guide kings and princes so skilfully that without noticing it themselves they do exactly what the wise viziers deem necessary in the interest of their master the dynasty or the state, and who are not overscrupulous about the means as long as the end justifies them.

There is a certain kinship between the "Hikayat Ganja Mara" and the "Hikayat Sultan Bustamam" as regards some of the principal characters in the stories, which rather points to a common source, but where that source is, I have been unable to trace. The author of the "Hikayat Sultan Bustamam" apparently had a deep respect for the king of Gujerat (although he is nearly the only prince not converted to Islam by the hero) which may point to the story having originated either in Gujerat or somewhere in the neighbourhood. This would explain its finding its way into Malay literature, the influence of Gujerat on it being well-established. But I have been unable to trace the names of persons or countries mentioned in the Malay text in the Index to "The Arabic History of Gujerat" edited by Sir E. Denison Ross (London 1910-1928). The only hint as to its origin to be found in the Malay text is "Sultan Kēbir Shah of our country" and his son Sultan Shah. (see below).

But in spite of its not being an original Malay story, and in spite of its being somewhat akin to the "Hikayat Ganja Mara," I think a synopsis of the "Hikayat Sultan Bustamam" is worth publishing, as it might lead to tracing the Indian original, and perhaps to a new edition of the Malay text, which well deserves it. Besides, I have been told that so far very little is known of the legends woven around the conquest of India by Islam, and a contribution to our knowledge of them might be acceptable, even if derived from a foreign source. As regards the beauty of the story, even after the adaption ("di-obah-kan") of it for the Malay language, I am sorry the condensation of 507 pages folio into the synopsis below can only give a very feeble reflection of it.

Amongst proper names the Malay scribe has played the usual havoc. They are sometimes interchanged, and are spelled differently throughout the text. I have corrected obvious mistakes, and have transcribed them as they occur the first time or appear later more pronounceable.

I have to thank Dr. G. F. Piiper for his kindness in transcribing for me the Arabic titles and the Arabic genealogy of the kings of Sēmatrani.

This is the story of Sultan Bustamam, famous in Arabia and Persia, who conquered the whole of Khairani and converted people to Islam far into the North.

There is a country called Sēmatrani, with a port called Bandar Amasad, ruled by Sultan Yahya. His grand-vizier is Aplus, a

Journal Malayan Branch [Vol. IX, pt. I.

very wise man. Ships from Iskandariah, Arabia and Hindustan as well as from all islands visit the port, and caravans come from the interior.

In the interior, about eight days travelling, lies a kingdom of the Ibērani, called Bēdērani. The name of its ruler is Maharaja Beniasin, and his grandvizier is called Taniasin.

Aplus puts an end to the frequent disputes and differences between Sēmatrani and Bēdērani by a letter and later a visit to Bēdērani, and commerce between the two countries flourishes.

The rulers of both countries are childless.

Five days to the south of Sēmatrani and subject to it lies a small principality called Damshik. Its prince, Amir Thalib, has two sons, Amir Sējaa, whose mother died at his birth, and Amir Ismail, son of a younger wife, who does not love her stepson. Amir Thalib divides his property; the share of Ismail he gives to the latter's mother, the share of Sējaa to the latter's fostermother. In Sējaa's share is a broad, curved dagger (*jambia*), an heirloom. Ismail's mother intrigues against Sējaa without success, but when Amir Thalib dies, she makes Ismail the ruler of the country, robs Sējaa of his patrimony, and though the courtiers try to intervene, she compels Sējaa to ask Ismail's permission to leave the country. Ismail agrees and tries to obtain the dagger from Sējaa against payment of 10 dirhams, and when Sējaa refuses, sends his courtiers to obtain it by force. They disobey his orders, bring Sējaa over the frontier into Sēmatrani and build him a hut in the jungle. When his wife is going to give birth, Sējaa leaves her to find a midwife, is held up by bad weather, and loses his way in the jungle. During his absence his wife gives birth to a daughter,—assisted by the wife of a passing stranger, who calls the women of a village in the neighbourhood. Sējaa names the girl Siti Sēlamih. In the jungle she reaches the age of nubility.

Sultan Yahya starts for a long hunting-trip. Five days after he has left the queen sends her brother, Amir Bahud, a coarse, brutal man, to take provisions to the hunting-party. One of his three elephants dies, and Amir Bahud, unable to find other beasts of burden or coolies in the jungle, forces Sējaa and his wife to carry the loads; Siti Sēlamih escaping by chance. With cruel blows Bahud compels Sējaa and his wife to follow him for several days. When they break down, a man with a couple of elephants comes along. Bahud presses him into his service and leaves Sējaa and his wife lying on the road, unable to return.

Sultan Yahya, hunting deer, finds the house of Sējaa and sends his page to ask for water. The page finds Sēlamih, exhausted by sorrow and want of food: she says that her parents have been carried away by robbers and gives him some water. The page reports, and the king goes to Sēlamih, falls in love with her and sends for Aplus. He bids him have a search made for the robbers; meanwhile he will do his duty by the forsaken girl. Aplus

sends for some aged court-officials and the Khatib, and it being decided that in such a case the king may act as the Wakil who gives the bride away to himself, Sultan Yahya is married to Sēlamih, who at first is unwilling, but yields to the persuasion of Aplus that this is the only means of being reunited with her parents. The Sultan stays with her overnight in the hut, Aplus and the officials keeping watch outside, and returns with her to his town, where Sēlamih is given a palace.

When searching for the robbers Aplus meets an old man who calls him by name and promises him a child that will be an ornament to Islam. Search for the parents of Sēlamih would be vain. Two children would be born to the Sultan, the eldest of whom would be very fortunate. Aplus should make no enquiries about him who speaks to him; he will soon understand the will and the power of God. The old man disappears, Aplus returns to the town and reports to the Sultan, who orders alms to be distributed and prayers be read for the fulfilment of the prophecy.

Sēlamih is still mourning for her parents, of whom she has no keepsake but the dagger. She becomes pregnant; the queen tries to intrigue against her, but the Sultan protects her. One day he leaves the town to watch the repairing of the tomb of his ancestors, whereupon the queen sends two of her maids to call Sēlamih under the pretext that her parents have been found, but with the order to bring her to Bandar Amasad and sell her to the first ship sailing for a foreign country; the price the maids may share. The maids sell her to one Kakaduni, mate of an Arabian ship sailing for Pulau Sērindit. He pays 20 dirhams for her, but insists upon a letter of sale signed by the Sultan, which on the instigation of the queen is forged by her brother Amir Bahud and sealed with the seal of the Sultan. In vain Sēlamih protests; the Sultan's letter convinces the guards and the harbourmaster that everything is in order, and Kakaduni is allowed to take her on board of his ship. The maids report to the queen, who herself makes it known that Sēlamih has disappeared and informs the Sultan. All search is in vain. Aplus suspects the queen.

The queen gives birth to a son, Bahrum Shah; a few days later a son is born to Aplus and receives the name of Jamlus. Two years later the queen gives birth to a daughter. In both cases a messenger is sent to Bēdērani to Taniasin, and Maharaja Bēniasin sends presents. The Sultan and Aplus remember gratefully the old man, whose prophecy they think has now come true.

Sējaa and his wife at last crawl back to their hut, but Sēlamih is gone, and they find only her old clothes. They find no traces but those of men, and though a tiger may have carried off their daughter, they decide to go in search of her. Wandering from one village to another, they discover nothing, and when they come

to a large grange not very far from Bědĕrani and are kindly received by the owner, Malik Jĕmala, they settle down in the neighbourhood and adopt one of his children.

The ships carrying Siti Sĕlamih meets nothing but contrary winds. Everybody knows that she is pregnant, but she refuses to tell even the captain the father of the unborn child. The captain suspects that she is a woman of ill omen (*orang malang*), as otherwise the sultan, who could not need the money, would not have sold her. A ship's council decides that she must be put ashore, and that the price he paid for her should be refunded to Kakaduni. The latter cannot refuse: he takes her ashore, gives her an amulet (*azimat ism'illah*), which he writes for her on the back of the letter of sale, some provisions, and after having prayed for her, returns to his ship. Sĕlamih wanders along the shore, afraid to enter the jungle. The amulet protects her from tigers but the other animals, crowding round her in the night to be also protected, frighten her, and she finds no sleep. Wandering further next day, looking for water, she breaks down and swoons. Recovering, she sees a young man on horseback, who she thinks is her husband, but soon she sees that he is a stranger. He calls her by name and tells her not to be afraid, as God will protect her. She would find her family again in Tahta Yemen and should wander in the direction of Khairani, where she would find friendly people to take care of her and her child. Passing his hand over the bundle with provisions and over the dagger, he tells her that fresh water will spring from the earth wherever she thrusts the dagger into the ground, and that the victuals will never become exhausted. He adds another name of God (*ism*) to the amulet on the latter of sale, which will protect her from every danger, and rides away over the sea. It is believed that he was the prophet Khizr. Comforted and refreshed, Sĕlamih resumes her wandering, and though friendly people, seeing her state, try to detain her, she continues her way until she reaches the mountain Jĕbel Thĕlahin, where she enters a pleasure-garden. The ruler of the country is a king of the Jins, Thĕlahut, and the garden belongs to his queen, Dewi Nilawati. When the latter comes to her garden, she becomes angry at finding it entered by a human being, but none of her maids nor the Jins she calls up can approach Sĕlamih owing to the protection of the amulet. Dewi Nilawati sends for her husband, but Maharaja Thĕlahut, too, is powerless against the amulet. He comprehends its force, speaks kindly to Sĕlamih, and recognizes her. He and Dewi Nilawati make friends with Sĕlamih, and when the latter insists on wandering further, Dewi Nilawati tells her that no harm will befall her, as she has met the "Khatib al-aalam" (Khizr). She bids two fairy-princesses, Chĕkur and Jĕrangau, accompany Sĕlamih, and gives her a wishing-ring, to which Thĕlahut adds another ring of great value. Sĕlamih reaches the river Baidl, but her time has arrived, and she is brought to the house of a Zahid Sufian (or a Zahid of the Sufi-sect?), a large landowner living by the

river. In his house Sēlamih gives birth to a boy, for whom the Zahid chooses, according to the *raksi*, the name of Bustamam, prophesying that he will conquer and convert to Islam the whole of Khairani. Sēlamih should stay with him: her parents and her husband she would find again later at Tahta Yemen. Sēlamih obeys, hangs the amulet round Bustamam's neck and gives the dagger and the bundle with victuals to the fairies to keep for her son. When Bustamam is about one year old. Sēlamih, when visiting the plantations across the river with the wife of the Zahid, is carried off by a messenger returning from the prince of Tēlēktata to Sēmatrani. He is, however, unable to do her any harm, and he promises to bring her to Tahta Yemen and to ask her in marriage from her parents, whom Sēlamih tells him she is going to meet there. When they reach Sēmatrani, the messenger is put into prison for some offence, and his family take care of Sēlamih who they think is his wife.

The wife of the Zahid informs her husband of what has happened to Sēlamih, but he is sure that no harm can befall her, and that it is the will of God that he should bring up Bustamam. The time when Sēlamih would find her parents had not yet come. The fairies have already been informed of what has happened, by Dewi Nilawati. From his seventh up to his twelfth year the Zahid and the fairies educate Bustamam and teach him all they think necessary. When twelve years old, Bustamam asks who his parents are, and is told all. He would go to Tahta Yemen to search for his parents: the Zahid tells him that the time has not yet come when he shall meet them, but that he may go away to see the world. Taking the dagger and Kakaduni's bundle, and accompanied by the fairies, Bustamam leaves the Zahid, loses his way in the jungle and comes to a mountain where Sēmbakas is the ruler of the Jins and spirits. He is prevented by the amulet from approaching Bustamam, but being acquainted with the fairies, obtains through them permission to meet Bustamam, entertains him and gives him five swords, two for fighting, and three ornamental ones, as Bustamam will meet four sons of officers and courtiers from Sēmatrani, who have been compelled to leave their homes owing to the oppression by Bustamam's younger brother. He shows Bustamam the road to Sēmatrani.

In former years, when the ancestors of Bēniasin ruled in Bēdērani, one of the kings, when feasting his ministers, had seen the moon being split in half.¹ He sends an expedition to find what has happened, and travelling through Rum, Turki and Persia the messengers reach Arabia. They are told that a man from Mekah, of good family, had proclaimed himself the torch of the Lord of all the worlds, and had altered the old creed. A great prince from the East had come to him and had asked for a token, whereupon the man from Mekah had invoked the moon and had

¹The well-known legend, in Malay "Hikayat bu'an berbēlah duwa"

done the wonder, which had converted the prince and many other people. But before the wrath of the prince of Mekah the man had fled to Medinah. The messengers decide to report to their king by letter and to proceed to Medinah to make further enquiries. The report duly reaches Bēdērani, and the king resolves to wait for the return of his messengers. The report is placed in a golden casket, which the king keeps locked in a chest next to his bed. From time to time he reads the report, but dies awaiting for the messengers (who never return). His successor took out the casket from time to time, burned incense before it and sprinkled it with perfumes, but never opened it or read the report. His successors worshipped the casket, over which they used to scatter flowers, but none dared to open it, and that worship had come down to the time of Bēniasin. Once Bēniasin dreams that he will remain childless. He talks his dream over with his grandvizier Taniasin, who advises him to put his trust in God. The king mentions the casket and proposes that some vow should be made to it. The casket is brought and an offering of gold and silver is promised, if the king's wish should be fulfilled. The following night an old man appears to him in a dream, saying: "orang bērkaul bērnadzar mēmintakan mēmēlihara diri-nya, maka raja bērnadzar akan mērosakkan diri-nya." ("People generally offer prayers and vows to God wishing to protect themselves: the king makes vows to destroy himself"). The king calls Taniasin, who has had the same dream, and Taniasin consults the sages. They say that they have had signs that an immense flame of fire would rise and burn the whole country of Khairani, that it would look quite white and not a single leaf would be left in it, but they are unable to find out the meaning. Taniasin sends them away, but mournfully ponders over the king's and his own dream. In the following night the king dreams that a beautiful youth comes to him and tells him, only the unclean (*najis*) will disappear and everything will be clean: he should therefore not sorrow. The king informs Taniasin, who tells him what the sages have said and thinks that it is a good omen. Alms are distributed, and two months later the queen and the wife of Taniasin become pregnant. The queen gives birth to a daughter, Princess Kēmalawati, and the wife of Taniasin, fifteen days later, also gives birth to a daughter, who is named Rakna Mala. The king of Sēmatrani and Aplus are duly notified. The two girls grow up together: many princes sue for the hand of the princess.

At a distance of about 6 months' travelling from these countries, in the North, lies a kingdom of sun- and fire-worshippers (*kafir majusi*), called Loban Kaladesa. It is ruled by Maharaja Kerbahur, to whom the country of Khairani is also subject. His two queens have given birth to two sons, the elder Dandam Bachtiar, who is as most men of his country about 6 cubits high, and immensely strong. His younger halfbrother is called Dandam Serjana. Their father sends female messengers out to the courts of

all the neighbouring countries to sell clothes in the palaces, and to draw pictures of the marriageable princesses. At a distance of ten days travelling from his own city he causes an immense town to be built, which he calls Tahta Yemen. In that town Dandam Serjana shall rule, whilst Dandam Bachtiar will inherit the kingdom of his father. Bachtiar is known as a bad brutal and violent character. When one of his messengers brings him a picture of Princess Kēmalawati of Bēdērani, Kerbabahur chooses her as wife for Bachtiar; to choose one for Serjana he waits for pictures from the West.

There is a small country called Samaluki, which has a flourishing export of spices, but suffers greatly from invasions from Turki and Sembat. The king and his ministers therefore resolve to institute a gynarchy, the ruler, ministers, officials and soldiers to be women; the men shall not participate in the affairs of state but do the work of the women. The woman also chooses her husband and has to ask him in marriage. The female army succeeds in repelling an invasion of the Turks and others, to their great shame, and soon the neighbouring princes leave Samaluki alone. The picture of the princess of Samaluki is brought to Kaladesa, and Kerbabahur chooses her as a wife for Serjana. Embassies are sent to Bēdērani and Samaluki.

King Bēniasin is against the proposed marriage, as the bridegroom is a stranger in race and creed, and besides a brutal giant. He may not, however, decline, his country being too weak, and Taniasin advises him to accept the suit but to ask for Serjana as bridegroom for the princess, who is younger and would not live so far away. Kerbabahur is satisfied, and the arrangements are confirmed by letters. The town of Tahta Yemen will be the present of Kerbabahur to his daughter-in-law; in three months the marriage shall take place.

Bēniasin puts a life-size portrait of Serjana in his palace. Kēmalawati sees it and is horrorstruck, but is told that Bachtiar is still worse, and that her father, being weak, must fulfil his promise. Kēmalawati further finds the casket near the bed of her father, her maids implore her not to open it, but Rakna Mala encourages her, as with that bridegroom neither wrath nor death should have any terror for her. They open the casket and read the report, which the princess commits to memory. Rakna Mala informs the king, who is not offended. He builds a special palace, wherein the princess and Rakna Mala with their own court are installed, but being in great apprehension as regards the future, the king informs Sultan Yahya of Sēmatrani of what has happened, and calls up the princes subject to him.

The other embassy reaches Samaluki and is greatly surprised to find a women's reign. The queen tells them that according to the custom of the country the princess must ask the prince in

marriage, but they would send an embassy to Kaladesa, and if they liked the prince and he would submit to their customs, he should have the princess. Kerbabahur is furious, sends the letter back and threatens war if Samaluki disobeys his will. He orders Bachtiar to prepare to attack Samaluki, and gives him the picture, which appeases Bachtiar, though at first he was offended as he knew that the princess of Bēdērani was intended for him. The picture of princess Kēmalawati Kerbabahur gives to Serjana and tells him to proceed to Bēdērani and marry her. Together the brothers depart and pitch a camp where their roads separate. There they meet an ambassador from Samaluki, and open the letter addressed to Kerbabahur, which reproaches him for his attitude towards a weak people. They are a weak people, with heads as fragile as the egg of a pigeon, but they will offer resistance as well as they can, and when they are vanquished and powerless, he can do what he likes. Dumbfounded the courtiers and officers look at each other, giddy as from the smell of datura. The two princes quarrel as to which of them is concerned in the matter, and Kerbabahur is called to make peace between them. He arrives in haste, but is furious and ashamed when the letter is read to him, and orders his officers to impale the letter and the picture of the princess. He promises Bachtiar another bride, but Bachtiar insists now on princess Kēmalawati, whilst Serjana will abide by his father's decision. Kerbabahur ponders how to find a way out of this dilemma.

Sultan Yahya of Sēmatrani gives his son Bahrum Shah as companions Thahak, the son of his brother-in-law Amir Bahud; Jamlus, the son of his grandvizier Aplus; Dhadan, the son of an officer; Sulan, the son of a biduanda, and Halwan, the son of a merchant. Under the influence of Thahak, whose character resembles that of his father, Bahrum treats his companions very cruelly, especially Jamlus. Once he is whipped until blood is drawn, and then bound and exposed to the sun. His father and the Sultan find him, and Thahak is removed from the court of Bahrum Shah. His father Bahud is offended at this and intrigues with the queen against Aplus and his son. The queen tries to persuade the Sultan to appoint Bahud grandvizier, and though not yielding to her, the Sultan neglects Aplus and gives some of his work, especially outside the court and the town, to Bahud, who tries to incite the officials against Aplus. Once, when villagers bring contributions to Aplus according to custom, a scene ensues in the audience-hall between Bahud and Aplus, and the Sultan has to take the side of his grandvizier and to reprimand Bahud. But the Sultan is weak against his queen and his son, and soon Thahak is admitted again into the companionship of Bahrum. Life becomes unbearable for the other boys, and Jamlus and the three friends resolve to run away. One night they leave their homes, and disappear. To put pursuers on the wrong scent, they kill a deer, tear their clothes, and leave them, smeared with blood,

in the jungle. Some peasants find the clothes and everybody thinks the boys have been carried off by tigers. The Sultan, too, mourns for them, recognising that the behaviour of his son is the cause of their running away. The boys lead a happy life in the jungle and the villages.

Bustamam in the meantime has come into the neighbourhood of the town. The fairies hide invisibly in his knees, the swords he conceals in the jungle. He meets Jamlus and his friends, and they soon feel great sympathy for each other, Bustamam persuades them to follow him and leads them to the swords. Dhaban chooses immediately one of the fighting swords, the others choose an ornamental one. They tell him who they are and why they have run away, and Bustamam asks them to wait a few days for him, as he wants to see the town. He feeds them with food from his bundle, and they drink the water produced from the ground by the dagger. Bustamam calls Chêkur and Jêrangau, and Chêkur is told to guide the boys to the hills. Jamlus tries to find out from Chêkur who Bustamam is, but she will not tell him. When they have reached the foot of the hills, Chêkur disappears. Sêmbakas finds the boys, and to test their courage, appears in the form of hideous animal. Jamlus and Dhaban show no fear; the latter snatches up his sword to defend Jamlus. He fights with Sêmbakas, who captures him and orders Jamlus to await with his two other friends the return of Chêkur. He will take Dhaban with him, and Jamlus should tell Chêkur that he who had given Bustamam the swords had taken Dhaban with him, and would bring him back when Bustamam returns. He tells Jamlus who Bustamam is, and disappears with Dhaban, to whom he teaches the science of war. All the boys are glad to have found a new master.

Chêkur finds Bustamam in the house of Aplus. The latter had found the boy in the town where he had made preparations for the voyage of the Sultan to Bêdêrani, and feeling a strange leaning towards him, has taken him home. Bustamam tells his name and that he has been separated from his mother, for whom he would search in Bêdêrani. The fathers of the other boys come to Aplus, and when they talk over the disappearance of their sons Bustamam opines that they have run away to find a better master and will return later. Aplus ponders over the possibility and asks Bustamam to go with him to Bêdêrani, but Bustamam is afraid of prince Bharum Shah after all he has heard. He consents however to stay over night with Aplus, who sees his dagger, and reflects that Bustamam may be the son of the Sultan and Siti Sêlamih. Chêkur receives permission to tell Jamlus everything, and following his advice she brings the necklace of Jamlus and the sword of Dhaban, which the boys had given to Bustamam to be sent to their parents, to the mothers of the two boys, saying that she had found the things outside the citygates. Chêkur then

returns to the other boys and finds Dhaban gone and Jamlus already knowing all about Bustamam. They remain together at the foot of the hill. Aplus finds cause for further musing in the reappearance of the necklace and the sword.

The news of the visitor of Aplus and of his beautiful dagger reaches the Sultan and Thahak, who persuades Bahrum to send for the boy. Bustamam declines to come or to send his dagger for the inspection of the prince, and Thahak and Bahrum send some of their men to take the dagger from him by force as soon as he leaves the house of Aplus. Aplus is anxious on Bustamam's account and thinks it better that Bustamam should leave at once for Bēdērani. He gives him a jacket as a keepsake, and Bustamam leaves him, declining to be accompanied by an officer. Bahrum's people approach and ask him to sell the dagger; if he will not consent, they will take it by force. Bustamam asks whether he is dealing with a prince or a streetrobber? Much ashamed the messengers return, but are bidden by Thahak and Bahrum to do as they are ordered. They approach Bustamam again, who says that this is a matter for the king to decide. One of the messengers snatches the dagger and runs away; through a charm Bustamam makes the dagger harmless, goes to the audience-hall and asks the Sultan, whether the robbery had been committed in his name. The Sultan sends an officer to Bahrum to fetch the dagger; Thahak exchanges it for another one, though the officer sees it and warns him. Bustamam declines to accept the proffered substitute and calls witnesses who have seen his dagger. The officer relates what has happened, and the Sultan sends Bahud with strict orders to reprimand his son and to bring the real dagger back. Bahud, who naturally takes the side of his son and the prince against the village-boy, is easily persuaded and returns with empty hands. The Sultan offers Bustamam one of his own daggers, but Bustamam declines. He had not come to ask for a weapon, but to tell him of the robbery. He saw now that he would have to bring his case before the judge, the Sultan being busy with other things and having no time for this small matter. But the Sultan would think otherwise as soon as a righteous judge could be found; he, Bustamam, would now go to Bēdērani to search for his parents. Jērangau brings him his dagger, substituting a similar-looking one, and he returns to the other boys. The jacket Aplus has given him he gives to Jamlus. Sēmbakas brings back Dhaban, and they take leave of Sēmbakas and set out for Khairani.

When they reach Bēdērani, they meet Taniasin, who likes the boys at first sight. They tell him that they have come to see the marriage of the princess of Bēdērani, and he advises them to find lodgings near the palace. They see an immense number of people carrying water into the town and hear that there are no wells inside the walls. They find lodgings in the house of an old woman called Sokma and her husband Dahdi, on the condition

that every day they have to fetch two jars of water. Sokma brings them back to Taniasin to ask his permission to house the strangers and is chaffed that Dahdi will become jealous. The head of the water-supply frees her and her guests from carrying water for the palace, but advises her to bring now and then some flowers or fruits to the princess to show her good will. Sokma will cook for the boys but they decline and eat from the bundle of Kakaduni, and Sokma thinks they are followers of Islam and may not eat her food. During the night, when they have a room to themselves, they ask the fairies to change the looks of Jamlus and his friends, so that they may not be recognised by their parents who are sure to come to Bēdērani to attend the marriage. They arrange that Bustamam should be given out as the son of their "Guru" and be addressed as Tuan; the names of the other boys are changed: Jamlus into Johar, Dhaban into Khamis, Haiwan into Jumaat, and Suban into Sabtu. The next morning the old couple are surprised at the change, but accept the explanation that it is due to their having had their first good sleep for a long time. Johar hints that Bustamam would probably be able to find water within the town, for which the old people think the king would give whatever he would ask for, but Bustamam says he is still too tired for that task and requests them not to talk about it.

Every day the boys stroll through the town, and Jumaat, acting as a broker in the market, earns enough money to buy food, and to make a present to the old couple. Bustamam wishes to send the two fairies in search of his parents, but they tell him that he will find them at Tahta Yemen, though the time had not yet arrived.

One day Sokma brings a little present to the Queen who tells her that she is freed from carrying water for the palace. She then pays her respects to the princess, who is still mourning over her fate. Sokma is mercilessly chaffed by the maids and Rakna Mala, and says that she has her grandsons living with her, one of whom would probably be able to find water within the town. Rakna Mala asks about him, and Sokma says she does not know who he is, but is sure that he is of noble descent. He does not eat her rice and curry, but lives from the provisions he has brought with him and is probably a Muslim. The princess and Raka Mala think of the report they have read. When Sokma returns to her house, Johar gets from her all the information about the princess and her sorrow over the intended marriage, and Bustamam arranges with him that Johar and his friends, under the protection of Jêrangau, shall go to Tahta Yemen and make enquiries about Kerbabahur and his power. They reach Tahta Yemen, stroll through the town and hear in the audience-hall that the prince will soon start for Bēdērani. They proceed to Kaladesa, where in the audience-hall Kerbabahur shows the pictures of other princesses to Bachtîar, who likes none of them. The audience-hall being thronged, they wait outside for the princes. First comes

Serjana, who looks so hideous that they think he must be Bachtiar, but when the latter comes, they are really frightened. He talks to them, and when they tell him that they have come to see the wedding, he bids them return promptly, as he will soon leave for Bědērani. They have trouble in leaving the town, as the gates are closed and are opened only once in ten days when Kerbabahur bids his sons visit him; but Jěrangau opens the gate for them. They have seen the impaled letter and portrait of the princess of Samaluki, and Jamlus learns the letter by heart. They return to Bědērani, where meanwhile the guests from Sēmatrani have arrived. Aplus is lodged near the house of Taniasin, and the two friends discuss the loss of Jamlus and his friends. Taniasin does not believe in the tiger-story but thinks that the boys have used the ruse of the bloodstained clothes to avoid pursuit, and tells of the five boys who have come to see the wedding. He sends for them and greatly frightens thereby the old couple, as four of the boys have left. The old woman runs to the palace of the princess, and mad with fear talks wildly against Tamasin, whilst old man Dahdi feigns to sleep. Rakna Mala finds out what the matter is, and the old dame is much chaffed and sent to Taniasin, where Dahdi appears with Bustamam. Aplus recognizes him and Bustamam admits that he has stayed with Aplus at Sēmatrani; he has come to Bědērani to try and find justice. Aplus informs Taniasin of the matter of the dagger. They try to find out from Bustamam who his friends are, but he feigns to know nothing and tells their new names, to the great disappointment of Aplus, though Taniasin thinks that names are nothing and that they must see the boys first. The old couple are chaffed again and sent home with Bustamam. Aplus draws Taniasin's attention to the latter, who does not look and act and speak like a village-boy and in a certain way resembles his king; while the dagger he had seen with him had been of great value. His king, however, had no other wife but his queen; he had once been married to a village girl, who had died after a few months. They then discuss matters of state and the dilemma of the king of Bědērani, who does not want to have his daughter married to Dandam Serjana, but is unable to oppose Kerbabahur.

Rakna Mala sends two of her maids to fetch Sokma; the maids see Bustamam in the house of the old woman and are surprised at his beauty. Sokma tells them that he is the son of the Muslim Guru. Arrived at the palace, Sokma is questioned about Bustamam, and whether he will be able to find water. Sokma is not sure whether it is Bustamam or one of his friends who has gone away and is sent home with the maids to make sure. Bustamam finds out that Sokma has already talked about the matter, though she tries to deny it. He admits that he knows something about finding water, but the real expert had gone to Kaladesa. The maids return to the palace and are sent again to Bustamam to enquire whether he could find a small spring in the palace from which they could water their flowers. The maids should carefully

note each word of Bustamam's reply. The latter answers, the real expert being away, that he would try and find some water; the reward the princess and Rakna Mala would know themselves, he only wants to buy some cloth for a headkerchief (*těngkolok*). The maids return and find the price very cheap; Rakna Mala opines that they do not understand and asks the princess to decide. A headkerchief means a crown (*mal:kota*), and no village-boy would use such words which could be interpreted according to one's own desire. The princess replies that if the water was found she would ask her father for the price of a headkerchief. Rakna Mala sends the maids to tell Bustamam that they promise to procure as his reward a headkerchief suitable for his rank. Bustamam is startled and wonders whether they have come to know his descent, but understands and promises to do his best. He sends the ring the Jin had given him to Rakna Mala as a pledge that he accepts the task; when it is accomplished, he will claim the ring. Rakna Mala is surprised at the value of the stone and says to the princess that God has sent them a deliverer from their distress. She explains about the "headkerchief suitable for his rank" and opines that his gift in return confirms that Bustamam is of noble descent and could be trusted to deliver them from the hideous giant. They decide to ask Sokma to bring Bustamam to the palace, and Rakna Mala sends two maids to ask Taniasin to their palace before he goes to the audience on the next morning, and her two usual messengers to take Bustamam a little box of perfumes (*lapek tangan*), when they come to the palace on the following morning.

In the night Bustamam asks Chėkur to make a well in the palace of the princess with his dagger, and to bring him something back from the palace. Chėkur obeys, steals into the chamber of the princess and takes away the coverlets of the princess and Rakna Mala. She plays all sorts of tricks with the sleeping maids, exchanges their garments, powders them with chalk and knots their hair together. Then she thrusts the dagger into the ground of the courtyard and brings it back to Bustamam together with the coverlets, praising the beauty of the princess and Rakna Mala. The coverlet of the princess, recognized by the richer embroidery, Bustamam keeps for himself, the other he rolls up.

When the two maids come in the morning, Bustamam feigns still to be asleep, and they are much surprised at seeing the coverlet of their princess. They invite him to the palace; Bustamam replies that during the night he had already disclosed a spring, but if the water should be insufficient, they could call him again. The maids ask about the coverlet; Bustamam replies that he and his friend had bought a coverlet each when they arrived at Sėmatrani, and his friend had left his with him to sell it. He shows the other coverlet to the maids, who recognize it as that of Rakna Mala, and he gives them both to show them to Rakna Mala in case she would buy them to match her own; and that of the princess the price Rakna Mala would know. The maids give him the box of perfumes and

return to the palace, where great disorder has reigned when the maids woke up and found out the tricks they had been played, but merry washing and bathing follows when the water is discovered. Taniasin, is astounded at seeing the water, as within the memory of man nobody could find water within the town. The hurrying of Taniasin to the palace of the princess, and the noise of the maids, have created excitement in the town, and the king himself goes to the palace of his daughter, but seeing Taniasin there returns with an easy mind. At the request of the princess Taniasin has the spring controlled and returns to his house, where he informs Aplus of what has happened. Aplus thinks the appearance of water in a barren city is a good omen, but the will of God they cannot know. Taniasin tells him of the king's and his own dreams when the princess was born, and the interpretation given to them by the sages, adding that he has had another dream that his house was falling in, that he escaped, and looking back had seen his house whole again and finer than before. Aplus can make nothing of it.

After a merry bath, Rakna Mala says to the princess that this must have been Bustamam's doing. The maids report and deliver the coverlets, which the princess and Rakna Mala recognize as their own. Rakna Mala would send Bustamam a message that the coverlets had been stolen during the night and that they would reward him if he could find the thieves, but the princess thinks this rather indelicate, and Rakna Mala sends the message that they would buy the coverlets but would agree on a price later; if he could not wait, they would send them back. They dare not send him the price, as they could not know whether he would accept it or find it below cost price. If he would name a price, and it agreed with their own estimate they would buy, but it would be difficult to bargain at a distance. Bustamam replies that Rakna Mala should keep the coverlets, as she knows the price very well. Though it would be difficult to come to the palace, he would try to do so if Rakna Mala invited him with the consent of the princess to bargain. The maids interpose that he had already been to the palace, and Bustamam replied that there is a difference between finding a spring and going to the palace to bargain and bring goods with him; when his friend returned, the matter would be easier. The princess and Rakna Mala are uneasy at this reply and fear that Bustamam has already another attachment, but Rakna Mala trusts in God that he will deliver them from the giant. When later the king and Taniasin bathe in the spring, Taniasin opines that they owe the water to the luck that rests upon Dandam Serjana; the king turns pale at the mention of the name, which Taniasin reports to Aplus.

Next day Bustamam goes to the audience. Maharaja Bēniasin asks who he is, and Sultan Yahya says that he is a village-boy from his kingdom. Bustamam brings forward his complaint, Bēniasin orders a courtier to enquire into it, but Bustamam refuses to answer him, saying that he knows it useless for him to prefer his

charge here. Bēniasin enquires, Bustamam refers him to Sultan Yahya, who narrates how his son had missed a dagger, and how his pages had seen a similar dagger with Bustamam and had asked to have a look at it, which Bustamam had refused, whereupon they had taken the dagger by force. He had bidden his son return the dagger to Bustamam, who had refused to accept the proffered one, saying that the original had been exchanged for another one. Prince Bahrum Shah had asked that the boy should be punished for theft, but he himself had not thought that the boy was a thief and had offered him one of his own daggers by way of amends. This Bustamam had declined saying that the king kept robbers in his employ. Bēniasin laughs and tells Bustamam not to cause trouble, offering one of his own daggers and to take him into his employ. Bustamam declines: he wants a righteous judgment whether he is a thief or not; if he is not, he is the robbed one, and the robbery having taken place near the palace of the king, it has been done by the king's men. As long as the matter was not decided, it was useless for him to enter the service of the king; if he thinks that later he can be of service to him, he will offer himself. Meantime he will search for a righteous judge who will judge his case without respect of persons. He leaves the audience-hall, and Aplus and Taniasin wink at each other. Bēniasin sees this, and Aplus reports what he knows about the boy and his friends.

Bustamam sees the entry of Amir Ismaël, the son of Amir Thalib, prince of Damshik, who is subject to Sēmatrani. Bustamam knows that he is his grand-uncle.

On the following night Bustamam, led by Jērangau and thus invisible, enters the palace and gazes admiringly at the princess, who is eating pomegranates with Rakna Mala. They smell his perfume and the maids think that the thief who formerly stole the blankets, has come and they try to find him. Bustamam steals the pomegranate the princess and Rakna Mala are sharing, but the latter skilfully hides the incident. The princess tells Rakna Mala to send for mother Sokma, who has not visited the palace for many days, and Bustamam returns to her house. When the maids come and call mother Sokma, she asks what she is wanted for. Bustamam explains; though Rakna Mala had given him a piece of pomegranate for his silence, he must tell her that she is called to the palace to be sent to the vizier to be punished, as her husband is very jealous since he and his friends were staying with her and had complained about her. Mother Sakma swears dreadfully and sends the maids away. Bustamam gives them the pomegranate for Rakna Mala, who should offer it to the princess, as he dare not eat it being afraid of "*tulah*." The maids report, and the princess is thrown into confusion, as Bustamam is sure to have overheard them. She wants to return to the palace of her mother; Rakna Mala opines that thereby she would drive away the saviour whom God had sent to deliver

¹A calamity consequent on sacrilege or extreme presumption against royalty.

them and the country from the giant. The princess is afraid that Bustamam will abuse his invisibility to do something shameful; Rakna Mala says she would not be any safer in the palace of her mother, if Bustamam wanted to do wrong; he had had ample opportunity, but had only played a joke on them. If the princess wishes to return to her mother, Rakna Mala will not follow her but hide in the forest, as she will not become the servant of the giant. The princess yields, and Rakna Mala suggests that they should entrust themselves to Bustamam, and ask his assistance; if he promises to save them, they should swear that they will shrink neither from danger nor shame. The princess agrees, but doubts if Bustamam and his friends will be a match for Dandam Serjana. Rakna Mala sends the maids for mother Sokma, and bids them tell Bustamam that they thank him for the well, but that a ghost is still hovering round it. If Bustamam could drive him away so that he would never molest them again, they would be grateful. The maids should also talk of the price of the coverlets and pay it to Bustamam.

Bustamam replies that Rakna Mala could surely find a man to drive away the ghost, who must not remain there, as he might harm Dandam Serjana, for whom the princess would mourn deeply. He did not know how to drive him away, and Rakna Mala should find another man to do it, but it should be done promptly, as Dandam Serjana would come very soon. As to the price of the coverlets, it would be better to await the return of his friend, as he was afraid that Rakna Mala would not pay him the right price unless the owner was present.

The maids want to take mother Sokma along, but she refuses, and Dahdi explains that she had a touch of fever. The maids return and report, Rakna Mala is disappointed, as she wants the calamity to be averted before it actually reaches them.

Johar and his friends return. Bustamam informs him of what has happened. The maids from the palace arrive again to fetch the old woman, who excuses herself that she has to look after her guests. The maids see Johar and his friends and report their arrival, saying that all of the newcomers do obeisance to Bustamam, but one of them seems to be much respected by the others and is intimate with Bustamam. Rakna Mala sends the maids again to Bustamam with the message that they are so afraid that they do not know what to do. The ghost had come with the water, and surely Bustamam should be able to drive him away, being the son of a Guru. Bustamam promises to do his best if Rakna Mala's order was given with the consent of the princess. The maids reply that Rakna Mala is acting with the consent of the princess, and Bustamam promises to try and drive the ghost away, but if the ghost should refuse to go, he had no other resource as perhaps the ghost had been there before and obtained a firm footing. Bustamam asks Johar whether he had brought anything they could give as presents to the princess and Rakna Mala. Johar has not thought of that, and Bustamam thinks they should buy something locally,

even if they were to get into debt for it. Johar offers even to sell himself to assist Bustamam, and to ask the maids if they know anybody who would allow him credit. The maids report at the palace, and Rakna Mala sends them back with two dishes of fruits and the order to bring mother Sokma. In vain the princess and Rakna Mala ask her for some news from Kaladesa.

Taniasin has heard of Johar's return and bids Dahdi to bring his guests to the audience-hall. Bustamam stays at home. Aplus and the fathers of the other boys are with Taniasin and at first sight think that their children have returned, but when they approach are disappointed because they only resemble them. Johar had threatened his friends with the great danger Bustamam would incur if his secret were disclosed, and the boys manage to control their feelings. Taniasin has watched them closely, and knows what Johar has been saying. Johar reports to him all he has seen and heard, and advises Taniasin to collect a store of provisions sufficient for the many guests that are sure to come ere long. Taniasin brings him to king Bēniasin and Sultan Yahya, where Johar has to repeat his story, leaving the two old princes in great sorrow.

Bustamam and Johar confer, and Bustamam declares his intention to stay and see what fortune will bring him. His friends swear to follow him even into death. He declares the same to the two fairies, who tell him not to be afraid. They bring him, unseen, into the palace, where Rakna Mala has prepared a meal of fruits. The scent of his perfume announces his arrival, and Rakna Mala tells the princess that the thief has come, but it takes her whole power of persuasion and a threat to abandon the princess to her fate and Dandan Serjana, until the weeping princess allows her to call Bustamam. Rakna Mala sends the maids away to look for the thief outside the princess' room as the princess wanted to hear the news his friend had brought from Kaladesa, and to ask him to drive away the ghost. Bustamam appears and warns Rakna Mala to be on her guard as he is a thief. He declines her invitation to sit down next to the princess though Rakna Mala opines that as the son of a Guru he is above all of them. He takes a seat opposite the princess and reports what Johar has seen, adding that Bachtiar was sure to come, as his younger brother would be unable to oppose him. Frightened, the princess retires into her bedroom, and with the consent of Rakna Mala Bustamam follows her. The princess wants to run away. Bustamam embraces and kisses her and asks her pardon if he has offended her. She rebukes him and when Bustamam twits her with having invited him, the princess says that not she but Rakna Mala had called him. In vain he tries to console her, and only by threatening that he will leave her to her fate and Bachtiar can he persuade her to precede him into the other room, where Rakna Mala has the meal prepared. Bustamam complains that Rakna Mala has cheated him, as the princess has denied having invited him and had asked him to go away, which he was now compelled to do. Rakna Mala offers to follow

him, as originally the princess had consented to have Bustamam called, but her heart had turned when she had heard what a mighty prince her bridegroom was. Thus they force the princess to implore Bustamam's aid against the "gërgasi,"¹ which Bustamam promises to give. He shares the meal with the princess, who offers him a goblet of Arrak Bërma. Bustamam arrests her hand and says that this drink, though lawful for her, was forbidden to him by the law he follows, which law the princess and her court should also adopt, so that God may love them and deliver them from her bridegroom, an unbeliever, who was recreant to Him, and adored sun and fire and professed that these had created the world. Is it not nonsense to call lord something we can create and carry from one place to the other like fire, something that is dependant on ourselves? Or something like the sun, which moves from one place to another, and sometimes is there and sometimes not? The princess and Rakna Mala follow the faith of the Adziz, the prophet of God, which had been right in its time, but now God had sent a new faith into the world, and it was right to follow it and not to stick to the old faith. He converts the princess and Rakna Mala and wine and spirits are thrown out with their vessels. Rakna Mala has new dishes prepared with nothing unclean in them and Bustamam explains to the princess and Rakna Mala the story of the letter which they still keep, and the story of the moon. The two fairies appear as a mouse and a cat; the mouse flees before the cat to the couch of the princess, followed by the cat, jumps down again and tries to hide under the skirts of the maids, causing much consternation and merriment. At last the mouse flees behind Rakna Mala, and the cat sits down before her. As Bustamam sees Rakna Mala's fear lest the cat molest her, he gives her a piece of cake and asks her to spare the poor little mouse. The cat replies that he was helping the princess and Rakna Mala, because he was promised a splendid crown, but what was the mouse giving him for his help? Bustamam replies that he expects no reward from the mouse but wants to help it for the love of God and out of pity. The cat asks why he had no pity for her, whose daily bread the mouse is, and she had not tasted food for several days? Bustamam replies that he had only asked her for the mouse and had offered her other food in return. In a dialogue with Rakna Mala the cat professes to be clairvoyant and says that Rakna Mala is the daughter of a vizier and will become the daughter-in-law of a great vizier. Bustamam joins them and says that Dandan Serjana is an enemy of God, and they owe him no pity. The cat accepts that but asks about the mouse, which according to tradition had begun to gnaw a hole into Noah's ark to make it sink, when out of the tears of the prophet Noah the cat was created to destroy the enemies of God. Since that day the cats had caught mice, and now Bustamam wanted to help a mouse. Bustamam replies that he has not prevented her from catching the

¹A man-eating demon.

mouse, but had given her the choice between the mouse and the cake. Rakna Mala understands that it is a play of Bustamam's, but one of the maids stares with open mouth at the talking cat, and the cat promptly puts her tail into the maid's mouth excusing herself that it was a hole she must stop up to prevent the mouse from escaping. A wild and gay hunt of the maids after the cat ensues, and the princess forgets her sorrows. The mouse asks Rakna Mala to save its life by taking it into the bedroom of the princess, promising as a reward to teach her clairvoyance. Not without misgivings Rakna Mala obeys, as she is curious to find out who Bustamam is. The mouse tells her the history of Bustamam, binding her to secrecy as Bustamam wants to remain unknown in order to search for his mother. Rakna Mala returns to the princess, saying that she had saved the mouse, and Bustamam, who suspects what has happened, smilingly tells her not to believe everything the mouse says. The fairies slip away and reappear in the shape of Dahdi and Sokma, knocking at the door and causing great consternation, the princess thinking that her father has come. She wants to hide Bustamam in her bedroom, but he declines, as he is no thief. Greatly embarrassed Rakna Mala goes to the door and finds the old couple, who in rather coarse language enquire after their grandson. Rakna Mala admits them, and there is so much merriment that king Bēniasin hears the laughter and sends two maids over to enquire. At a sign from Rakna Mala the princess draws Bustamam into her bedroom, and Rakna Mala explains that the old couple had quarrelled, as Sokma was jealous with Dahdi. Sokma complains to the king's two maids that the maids of the princess wanted to seduce her husband, and laughing the two messengers return. There is more merriment, until all go to sleep. Bustamam in the bedroom of the princess. Bustamam repeats his visit to the palace every other day, while the preparations for the royal wedding go on.

Maharaja Kerbabahur has tried in vain to interest Bakhtiar in another princess; Bakhtiar insists on marrying the princess of Bēdērani, whom Kerbabahur wants to give to Serjana, in accordance with his promise to her father. Serjana himself offers to withdraw, but his father wants to keep his promise and still hopes to find another bride for Bakhtiar. To gain time Serjana proposes to visit the princes of the subject countries, and Kerbabahur agrees. Serjana gives the order; Bakhtiar hears of it and reproaches Kerbabahur for having given Serjana permission to leave with the troops, as he is sure to go to Bēdērani and marry the princess by force. Kerbabahur promises to call Serjana back, but Bakhtiar says he will see to it himself, and leaves his father. Kerbabahur orders the gates of his city to be closed and not to be opened to any one unless he himself calls his sons to come to him.

Bakhtiar calls up his courtiers and in spite of their expostulations that Serjana would return on receipt of his father's order, he follows his brother and reaches his camp on the following day

just when Serjana had given the order to depart. Bakhtiar orders the troops to stop and kills all who disobey. He meets Serjana, tears him from his horse and blows his brains out. The terrified officers of Serjana, fearing the wrath of Bakhtiar and his father, arrange to throw the whole blame on Serjana. They bring his body to Kerbabahur, who has it cremated and orders an enquiry as to why this fratricide has not been prevented. As all the courtiers assert that Serjana was the first to use his arms, the court acquits Bakhtiar. Kerbabahur asks the Brahmans what should become of the princess, and they answer that not having been married to Serjana, Bakhtiar can still marry her, but only after the present year has expired, as she is still under a vow (*di-dalam kaul*). According to the stars great luck awaits the princess, but she will bring bad luck to Khairani. Kerbabahur is not afraid of that, as he can destroy Bēdērani in half a day, and he decides to give the town of Tahta Yemen, which he has already promised her, to the princess, to reside there, with her court and army, and reign there until she is married to Bakhtiar. He sends his vizier, Tewangga, with his whole clan, 200 courtiers, 1000 officers and 20,000 men with a letter to the princess to inform her of his intentions, and with the order to bring the princess to Tahta Yemen and crown her. All expenses will be paid by Kerbabahur, and if the family of the princess, whom Kerbabahur regards as poor people, will follow her, they may do so, and Tewangga shall see to it that they want for nothing. They as well as Tewangga must obey the princess in all matters. Only if they conspire against Kerbabahur, Tewangga must not join them, and if the prince of Bēdērani tries to oppose these orders, he is to attack his country and destroy it.

The news of the coming of Tewangga and of some of the contents of the letter he brings reach Bēdērani: Taniasin consoles his king that they must acquiesce in the will of God, and prepares everything for the coming of Tewangga, who is agreeably surprised by the reception and the honour done to the letter of his master. The letter is read in the hall of audience: Taniasin politely regrets the death of Serjana, Maharaja Bēniasin does the same and asks Tewangga to stay for some days with them, as he wants to think over the matter. Johar and his friends are present at the audience and report to Bustamam, who at night-time goes again to the palace of the princess. He informs her of the message Tewangga has brought and thinks that her father should accept the proposal, as Tahta Yemen is a well-fortified town, with plenty of provisions. If the princess reigns righteously, he hopes to prefer his charge against the son of the Sultan of Sēmatrani, and also hopes to find there his mother, who has been sold to Sērindit by people of Sēmatrani. He does not want to stay longer, as his friends press him to return and besides his funds are exhausted. The princess implores him not to abandon her, and Bustamam promises to persuade Johar to change his mind.

Tewangga is entertained by Taniasin, and Aplus, too, is invited. After the meal they discuss matters of state, and Taniasin bewails again the death of Serjana. Tewangga narrates that Serjana was the favourite of his father and of the court, while Bakhtiar was generally detested on account of his cruelty. Kerba Bahur knew that Serjana had been no party to the quarrel with his brother, but had been unable to find out what happened. Besides, the Brahmans had emphasized that Kerbabahur now had only one son. But what would Maharaja Bēniasin do? At Kaladesa they were in great trouble as Kerbabahur had been nearly maddened by the death of Serjana, and was following all the wishes of Bakhtiar, who was madder still. Thus sudden and cruel deeds could easily come to pass, and he trusts that Maharaja Bēniasin would try to meet and not rudely reject the wishes of Kerbabahur. Disobedience would mean destruction. Taniasin and Aplus admire the sagacity of Tewangga's words, and Taniasin tells him that they are like a ship on the open sea which founders if it does not sail with the wind, and they must trust in God to show them the right way. When later Taniasin and Aplus confer with Maharaja Bēniasin, they repeat the words of Tewangga which they interpret as a warning that he has orders to declare war if they do not obey, but also as showing them a way to gain time for further deliberation. They advise that the offer should be accepted. Maharaja Bēniasin asks the Sultan of Sēmatrani and the other princess and ministers to join in a council, and Sultan Jahya, after having heard the advice of the viziers, agrees that they should all follow the princess to Tahta Yemen under the pretext that she is still too young to reign by herself. All else they must leave to God. Tewangga is very glad that the wish of his master is obeyed.

Maharaja Bēniasin calls his daughter to his palace. Bustamam is in her bedroom; Rakna Mala enters and summons her, and the princess is frightened. She visits her father and is informed of the decision.

Saptu has attended the council and has informed Johar and Bustamam, who have returned to the house of the old couple. They decide to follow the princess to Tahta Yemen, but when Bustamam meets her again in her palace, he asks permission to return to his village, as Johar insisted upon it. The princess and Rakna Mala implore him to stay and reproach him with having played them false; Bustamam says that he had promised to deliver them from Serjana, and Serjana being now out of the way, his task was done. When they begin to cry, he suggests that they should ask the assistance of Johar. Bustamam sleeps in the room of the princess, whilst the maids prepare for the journey to Tahta Yemen.

On the following morning, Rakna Mala is made to call Johar, who immediately appears in the gallery, being brought there unseen by the two fairies. He studies the princess, who is sharing her meal with Bustamam, and admits that his master is right to risk

his life for her sake. He does obeisance to him and Bustamam says it was Rakna Mala who had called him. The princess likes Johar, and Johar and Rakna Mala are very pleased with each other. When Bustamam and the princess have finished their meal, the tray is brought to Johar, and the princess tells him that he may eat without fear, as she has already professed his faith. When Johar has finished, the tray is brought to Rakna Mala, who declines to eat, but is forced to obey the princess, who insists upon Rakna Mala obeying her as she has formerly obeyed Rakna Mala. Rakna Mala is sorry that she did not ask the mouse who Johar is. She asks him not to abandon them. Johar has all sorts of excuses, but the princess will take the wrath of his parents upon herself, and Rakna Mala, as daughter of a vizier, will be able to look after his and his friends' wants. The princess, who sees a chance now of paying back Rakna Mala in her own coin, orders her to bring Johar one of her own cloths and to measure him for a jacket, while Bustamam and the princess chaff her that God is now making her do what she had made others do. Johar and Rakna Mala fall in love but Johar says that he must see his friends before he can definitely promise to follow to Tahta Yemen. When he leaves, he kisses the cloth and the princess thinks there must be something peculiar in it, whilst Bustamam says that Johar has forgotten to take leave of Rakna Mala, and is now making up for it with her cloth. With the aid of the fairies Johar leaves the palace unseen. The princess tries to find out from Bustamam who Johar is, but he pretends not to know, and tells her to ask Rakna Mala, who is clairvoyant. Rakna Mala replies that she had only inquired about the *pěngghulu*, and being asked by the princess whom she means, Rakna Mala says that according to her ideas nobody but those of equal rank with the princess would be able to enter her palace and sit on her throne.

In the meantime everything has been prepared for the journey to Tahta Yemen, which under the supervision of the viziers is accomplished without mishap. The old couple are allowed to follow the princess.

Kerbabahur, having received Tewangga's report, sends rich presents for the princess and her family. The presents Tewangga, accompanied by Taniasin, brings to the princess, whom he sees for the first time, understanding the jealousy of Serjana and Bakhtiar. A letter also has come from Kerbabahur, which Tewangga reads to the princess and Taniasin. It confirms in kind words that the princess should be crowned as queen of Tahta Yemen, and that his two brothers, the kings of Bědērani and Sēmatrani, and Tewangga should take good care of her, until she is married to Bakhtiar. The princess replies that she will obey the wishes of Kerbabahur, as she has already obeyed him in coming to Tahta Yemen, but being ignorant of matters of state, she relies upon the aid of the viziers. Tewangga and Taniasin promise to stand by her, but Tewangga has noticed how the princess changed colour

when the letter was read, and on their way home he remarks to Taniasin that she seemed not to be pleased with the letter, and why had she turned pale? Taniasin replies that perhaps the princess was still fond of Serjana, and Tewangga understands that she will not like Bakhtiar. He tells Taniasin that the princess will be much worse matched with Bakhtiar than with Serjana (*sèperti kupang dengan pongsu*¹), and that he pitied her very much. If it was in his power, even if her father and the princess herself would come to like Bakhtiar, he would not agree to this match, and he would rather see the sun fall down upon him than this unequal couple married. Taniasin replied that they must leave it to God.

The old couple have been given by Taniasin a house near the palace of the princess; Bustamam and his friends try in vain to find them and rent a house near the market, where Jumaat and Saptu earn enough money for the daily wants of the friends. In the evening Bustamam visits the princess, who with her mother is still busy arranging things in her palace, which she likes very much, with its rich gildings and talking minahs and paroquets everywhere. They smell the scent of Bustamam, and the queen asks where it may come from; Rakna Mala says that the woodwork has been sprayed with it. The birds begin to talk, greeting Bustamam and congratulating themselves that they see his face which makes them forget hunger and thirst. The queen is startled, but Rakna Mala explains that these greetings are meant for the princess. The situation becomes rather embarrassing, as the queen shows no sign of going away. Her first maid, Nilam, pretty and intelligent as Rakna Mala, notices that the scent is fresh and that when the birds started talking, the princess arranged her dress and knew that somebody has come. Bustamam has brought two pomegranates with him; he takes off a piece of peel and throws it into Nilam's lap; she does not seem to notice anything, but hides the piece of peel in her hand. At last the queen departs, followed by Nilam; Rakna Mala accompanies them to the gate. The princess asks Bustamam where he has been all the time. Bustamam says that he had wanted to return to his village, but Johar had not allowed him to do so, and had sent him here with his present. He gives the princess and Rakna Mala a pomegranate each; Rakna Mala remarks that it is the present of a village-boy. Nilam returns to the palace; the princess and Bustamam disappear, and Rakna Mala receives her. Under the pretext that the queen had sent her to assist the princess, Nilam comes in and sees the pomegranates. She takes them up and says that on one of them a piece of the peel missing, and that the missing piece is in her possession. She tries it, and it fits exactly. She tells Rakna Mala that the queen has given her the piece to find out where it came from. She departs, convinced that Rakna Mala is hiding some secret. Rakna Mala reports, and the princess is alarmed but Bustamam explains that they have nothing to fear.

¹ Like a mussel with an ant-hill

Bustamam gives his dagger to Johar. When Johar visits the hall of audience, Amir Ismael sees the dagger, which looks exactly like that of his brother, and wonders how Johar came by it. Bahrum Shah, followed by Thahak, enters. Thahak recognizes Johar and points him out to Bahrum, who is not convinced, but Thahak insists and supposes that Aplus has kept him in hiding somewhere all this time. Amir Ismael talks to Johar, who says that he is a village-boy and that the dagger is as given him by his teacher, who bade him not to draw it from his belt and spoke many charms over it for fear that it would be stolen. Bahrum orders Thahak to fetch the dagger. Scarcely has Thahak touched it, when his hand begins to tremble and to smart so that he rolls screaming on the floor. Johar says that he knows no charm against that pain; they had called him a liar when he warned them, and Thahak must now suffer. He answers Bahrum's threats insolently, and is sent away to fetch his Guru. He leaves, doing obeisance to Amir Ismael, and taking Khemis away with him, shouts to Bahrum that for aught he cares Thahak may die. Bahrum is furious; Aplus tries to calm him: it was a village boy with no manners, and Bahrum should not start a quarrel here in a foreign country. Thahak's screams bring Amir Bahud to the spot, and also the king of Sēmatrani. The king says that Thahak had already once brought him into trouble about the dagger, and that he who won't listen must feel. Aplus replies that Thahak had acted on the order of Bahrum. Bahrum had sent his pages out to beat Johar. Khamis threatens to split their heads. Taniasin arrives in time to prevent a fight. Johar meets Bustamam, who is just going to the audience-hall, accompanied by old Dahdi. Bustamam spits into Dahdi's hand and bids him cure Thahak by rubbing the aching spot. Dahdi succeeds, and Thahak, ashamed of having rolled screaming on the ground before the whole audience, swears vengeance on Johar. The king bids Bahud watch his insolent son that nothing may happen. Thahak is carried home, followed by Bahrum and Amir Bahud. One of Bahrum's pages meets Bustamam and Johar and warns them against Thahak's vengeance. Johar replies that Thahak, if he had not has enough of the hilt of the dagger, can have a taste of the blade. Aplus hears of it and thinks that no village boy would use such words. He asks Dahdi, what was his cure Dahdi replies, the spittle of his grandson had effected the cure. When Aplus hears that by grandson Dahdi means Bustamam, he becomes pensive. Taniasin tells him of Khamis's words.

Amir Sējaa and his wife, who are still living in the village of Malik Jēmala, mourning for their lost child, hear that the king of Sēmatrani has gone to Tahta Yemen. With the son of Malik Jēmala, who brings presents from his father to the king, they wander to Tahta Yemen. They stay over night before the city gate and next morning while the son of Malik Jēmala takes his father's presents to Taniasin, Sējaa strolls through the town. The festivities for the coronation have just begin, and seeking the shadow of a

shed against the noon-day sun, Sējaa meets Bustamam and his friends. Johar wears the dagger. Sējaa sees and thinks he recognizes it. He asks Johar to let him see the blade: Johar replies that only yesterday it brought the whole country into uproar, but Bustamam asks him to humour the old man, who with his long hair and beard looks like a jungle-dweller. Sējaa draws the dagger out of its sheath, without anything happening to him. Bustamam wonders and mutters all the charms he knows, which make the blade red hot, but Sējaa feels it not. Chēkur and Jērangau observe this and give Bustamam a hint, but he pays no attention to it in his fear that his dagger and his charms have lost their magic. Sējaa says that he is sure it is his dagger, but why does it become red hot? He would return the dagger to Johar, who is afraid to touch it, and Bustamam takes it, muttering another charm. He asks Sējaa who he is, and when Bustamam realises that he is talking with his grand-father, he covers him with kisses. The old man is startled; Bustamam's head-kerchief falls off, and out of it the amulet written on the bill of sale which under the seal of Sultan Yahya delivers Sēlamih to Kakaduni. Sējaa reads it and bewails the fate of his daughter. Johar and his friends understand that the old man must be Bustamam's grand-father, and do him obeisance. He asks them how they have come by the dagger and the letter, and when Bustamam tells him, he recognizes his grandson. They go to Bustamam's house, close the door, and the two fairies appear and narrate to Sējaa, what has happened to his daughter. He fetches his wife. The fairies tell them not to mourn about their daughter. She is not far away and they shall soon be reunited. They stay at the house of Bustamam.

Bustamam and his friends watch the coronation. The throne is hidden by seven veils. Before it an enormous crowd is waiting. Sultan Yahya and Maharaja Bēniasin stand on the steps of the throne, before them the viziers: Taniasin and Aplus to the right and left, and Tewangga in the middle. The princess takes her place on the throne, Rakna Mala behind her, and two veils are raised as a sign that the princess is present. Taniasin and Aplus cross their arms awaiting the speech from the throne; Tewangga would do the same, but the two kings stop him: as an old man he has to stay with them. Tewangga knows that they do this by order of the princess, and obeys. Three times the trumpets are sounded, but there comes no word from the throne. Tewangga is perplexed, and at last calls out that they are ready to receive the royal commands. The princess replies that she entrusted everything to him and has nothing to say. Tewangga explains that the princess will only consent to rule if they will serve her "with the swords hung round their necks," as she is ignorant of matters of state and of the laws of the land. If anybody does wrong she will punish him in accordance with those laws but she does not know how to conduct an enquiry and to decide right and wrong, and cannot accept the responsibility. All agree to serve the princess, and it is arranged that the kings of Bēdērani and Sēmatrani shall

administer justice, the viziers shall conduct enquiries, and the officers shall execute judgment upon those who escape or try to evade the law. Four more veils are raised, the *nobat* is sounded, and all do homage, touching the ground with their foreheads three times. At this moment Bustamam gives a sign to Chëkur, takes her hand and thereby becomes invisible. Rakna Mala sees the four friends of Bustamam, standing outside and not joining in the homage, whilst Bustamam is invisible. The homage is repeated seven times, whereupon Rakna Mala scatters gems and flowers of gold and silver over the three viziers and sprinkles them with rose-water. The two kings do the same to the feudal princes, and everybody prays, according to his faith, for Sëri Maharaja Putëri. Dresses of state are distributed, and then the knights and officers draw their swords, and touching them with the forehead swear that their own swords shall cut their throats if ever they turn their back on the enemies of the country, or rebel against the sovereign. The princess and Rakna Mala are amazed at the gigantic warriors. The ladies of the viziers and the high officials then do homage to Sëri Maharaja Putëri, who returns into the palace, whilst alms are distributed to the poor and the fakirs, and a feast is given to princes, officials and warriors.

Bustamam visits the princess in her palace and sits down next to Rakna Mala, pretending to be afraid to take his seat near the reigning queen. Sëri Maharaja Putëri draws him to her throne and Rakna Mala chaffs him that he has not joined in the homage. On the following morning he asks Sëri Maharaja Putëri whether she would like to see a real jungle-dweller; there was one with his wife staying in his house, who had come to see the coronation and to prefer a complaint. The princess tells him to bring them and Bustamam adds that he also has to prefer a charge, for which he had not found a righteous judge in the kings of two countries, but which she must examine with the utmost care.

The fame of the administration of justice in Tahta Yemen penetrates to the remotest countries, beyond Arabia and beyond India, to Bëdërani, Zanjirat, Sëkandariah, Tërki and Aajam, even to Persia, and to the islands Talkia, Sërindit, Sëterkia, Mëdërih as far as the island of Habshah.

When Bustamam and his friends have watched this for some days, Bustamam remarks to Johar that he likes this way of administering justice, as his teacher has told him to prefer his charge in a court where it would be examined "without looking at the person," and here the ruler, sitting behind the curtains, could not see the people. He would prefer his charge on the following day. The viziers look round, but Bustamam pretends not to see them and leaves with Johar. Aplus and Taniasin laugh at the pun; the kings are startled, thinking that they have laughed at some silly action of theirs, and enquire. Taniasin repeats the pun of the misunderstood saying of the teacher, but Aplus opines that so far the boys have proved too intelligent, and is sure that they are no mere villagers. The kings agree; Tewangga asks, who the

boys are, and when he hears that nobody has found out yet, promises that he will find out their secret on the next morning.

When the princess returns to her palace, she remarks to Rakna Mala that on the following day she would know who her pēnghulu is, and his real name. Rakna Mala says she knows all about him, and tells the princess what she heard from Chēkur. Sēri Maharaja Putēri reproaches her for not having told her before, as she would have informed her father. Bustamam, who is just coming in and has heard the last words, suspects that Rakna Mala has told the princess his history, and letting go the hand of the fairy, appears before them and tells the princess, she should not believe Rakna Mala, who in her longing for Johar would tell her all sorts of foolish nonsense.

On the following morning he appears in the hall of audience, greets the kings like a blind man without respect and awe, and the viziers suspect that there must be something behind this behaviour. In a loud voice he claims to have his case tried. Generally in such cases Sēri Maharaja Putēri promptly orders the viziers to begin with the examination, but now she hesitates for some time, and lastly gives the order in a very low voice. Tewangga begins with the examination. Bustamam narrates how he has come to Sēmatrani, how the pages of Bahrūn Shah had robbed him of his dagger, while he himself had been charged with theft, how both kings, to whom he had preferred his charge, had dismissed it without careful examination, and so he is still charged with the theft. To Tewangga's repeated questions, who he is, Bustamam answers only that he has come as a plaintiff. Taniasin informs Tewangga that Bustamam comes from a village near the frontier of his country, but Tewangga does not believe that Bustamam is a village-boy. He asks him, where he comes from; Bustamam replies from the village of Zahid Saian. Tewangga asks him the name of his father; at this question Rakna Mala laughs and opines that now they would hear it. The king notices that and wonders what is going on; he changes colour, and Taniasin is in great trouble. Bustamam replies that the name of his father was Bustamam, too, and that of his mother also. Tewangga laughs and says that it is of no use to go on with the case of such a liar. Bustamam replies that indeed it will be of no use if they continue their present method. He leaves the hall; Johar asks him, what he means by his reply, as nowhere in the world father, mother and son have the same name. Bustamam replies very audibly that Johar is just such a fool as the viziers and should sit down next to them, as it would make four of the same sort. Tewangga hears this and becomes furious, the other viziers also jump up, and four soldiers who have to stand by Tewangga, approach. Johar repeats his question, and Bustamam his answer, adding that a child calls his parents only "ma" and "bapa," using the same names when talking of them, and that also by other people they were called "Ma Johar" and "Pa Johar." Tewangga shakes his head and observes that he has served his master for sixty years, but never

in his life has he been so stupid as to-day. He takes off his turban and throws it down so that the gems roll over the floor, rushes after Bustamam, takes his hand, kisses his mouth and asks his pardon for his stupidity. Bustamam replies that there is nothing to forgive, explaining, as Tewangga cannot follow him, that the fact of his seeing his stupidity was a sign that it had been forgiven, as that discernment was a confession that he would not follow it any more. In silence Tewangga leads him back to the audience hall. When he had confessed his mistake, Raknā Mala laughed and said that now he had come to some knowledge of his self and had conceived that there were still others wiser than himself. Her father hears the remark and becomes very pensive. Tewangga calls for the scribes, has everything read which they have written down, and asks the two kings to give him a short report. All concerned are bidden to appear before the court; Bahrum Shah is alarmed when an officer of the court comes to call him, but Thahak says that they have nothing to fear as long as they keep to their former statement. The pages are instructed accordingly, but are rather uneasy as the officer warns Thahak that the case is now tried by other methods than formerly. They appear in the court with the old broken dagger. The pages give evidence according to the instructions they have received, but Dumis, the *mēntēri* who was sent first to Bahrum Shah to fetch Bustamam's dagger back, is so uneasy in trying to shield his master, that Tewangga knows that there is something wrong. Bustamam asserts that Dumis has frequently seen the dagger on him, before he was robbed of it, and a thundering admonition from Tewangga, ordering two of the soldiers to approach with drawn swords, makes Dumis confess: he had seen Thahak hide Bustamam's dagger under his thigh when he had come to fetch it, and in spite of his warning Thahak had given him the other dagger which he had brought to the court. The pages admit their part in the crime. Bahud, Bahrum and Thahak are called and are too afraid to leave their place, but Tewangga thunders that better people than princes have had their heads cut off. They come, and Taniasin is told to examine them. Bahrum tries to lay the blame on Thahak but is reproached with being an accomplice in the crime. Thahak confesses that he has the dagger still at home. It is fetched, and Bustamam recognizes it as his weapon. All three are severely reprimanded by Aplus and led away by the ears to stand in the sun, while the kings shall pronounce judgment. The king orders the dagger to be returned to the owner: Thahak is guilty of theft and robbery, and only the fact that the deed had been done publicly saves him from having his hands and feet cut off: otherwise he will be punished as severely as the law permits. Bahrum and Bahud are guilty of complicity and will receive the same punishment (*hukum shubahat*), the one for following Thahak, and the other for not bringing up his son better. The viziers ask Sēri Maharaja Putēri to confirm the judgment: she declines and leaves the matter to Sultan Yahya, to whose family the

culprits belong. They are brought into his palace and kept prisoners, Thahak in chains and iron collar.

Aplus gives the dagger to Bustamam and asks him whether he now sees ways and means to enter the service of the king, and whether his friends had found the master they were seeking. Johar laughs at this question, and Aplus thinks whether he could not be his son Jamlus; he seems too much changed. Bustamam replies that Aplus had already answered the question, and repeats this again when Aplus cannot understand him. Bustamam asks to be permitted to put some questions himself, and receiving permission asks as follows:

If a prince has no will of his own, and no power, and follows the will of his subjects and his army, is he a good prince? The viziers laugh and reply that nobody should pay homage to such a prince.

Bustamam asks again: If a prince issues a decree that 10 catties of paddy should be sold for one dirham, and after some time issues another decree that 20 catties of paddy should be sold for one dirham, which decree should be followed? Would his subjects be justified in clinging to the old decree and continuing to sell 10 catties for one dirham. The viziers say that the question is foolish. If subjects do not obey each new decree of their ruler they are guilty of disobedience and must be punished.

Bustamam asks further: an official who cannot discern between good and bad, and though he sees he has done wrong persists in it, is he a good official? The viziers and princes laugh, and say that such a man should not be given office, and a man who knows that he does wrong but persists in it does not deserve the name of a human being. Bustamam thanks them and leaves the audience.

Johar asks Bustamam's permission to see his mother, and Jêrangau brings him to the house of Aplus. Invisible he stands near his mother, who still weeps for her son. She smells the scent of his body and thinking that the spirit of her child is present, burns incense. Johar implores Jêrangau to show him for a moment to his mother. Jêrangau lets go his hand and gives him back his former looks and Johar quickly kisses his mother, saying that the incense has brought him, and that she should not mourn for him any longer, as he would soon be re-united with them. Afraid that perhaps he has already gone too far, Johar grasps Jêrangau's hand and disappears. Aplus is told by his wife of the appearance of Jamlus, but does not know what to think of it, and Taniasin, to whom he relates the matter on the following day, can also find no explanation.

Siti Sêlamih still mourns her parents and her son. She perfumes the ring which Dewi Nilawati had given her. Maharaja Thêlahut by geomancy finds out what has happened and bids Dewi Nilawati bring Siti Sêlamih to Tahta Yemen, where she would find her parents and her son. Her son is living with the princess, but God has protected them so far from all carnal lust. Dewi Nilawati brings Siti Sêlamih to Tahta Yemen right into the palace of Sêri

Maharaja Putëri. The princess is just rising with Bustamam, and Rakna Mala, outside their bedroom, prepares the breakfast. Nilawati appears before Rakna Mala and demands what manners they have here that the daughter of a mighty king kidnaps her boy and keeps him in her bed: the princess must give back her boy immediately. Rakna Mala, frightened, tries to turn her off, but with no avail, and is sent to tell Bustamam that somebody has come to fetch him. Rakna Mala hurries to the princess; both Sëri Maharaja Putëri and Bustamam have rather a bad conscience, and Bustamam sends the princess to meet the visitor in order to gain time. Dewi Nilawati enjoys the situation immensely, saying that she had come from Sëmatrani to fetch her run-away boy, who, as Nilam, the maid of the queen, had told her, was kept by the princess. Bustamam, in the princess' bedroom, calls in vain for the fairies, who have recognized their mistress and know that she is going to have some fun with the young couple. The princess, sure that Bustamam has disappeared, asserts that there is nobody in her bedroom and threatens to have Taniasin called to turn the insolent intruder out. Jërangau and Chëkur assume the shape of Nilam and Silam, the two trusty maids of the queen, and when they appear on Nilawati's calling for them, Nilawati tells them of the princess' denial and threat: if the princess had told the truth, she would consent to be brought before Taniasin, but if not the princess would be punished. She enters the bedchamber, drags out Bustamam, puts him on the throne and asks the princess, who the boy is, whether he did not come out of her bedroom, and whose place it was now to be thrown out of the palace? But when she sees the frightened faces, she lets Bustamam go, and kisses the princess. Sëlamih clasps Bustamam in her arms. He does not know who she is, until Nilawati tells him. Jërangau and Chëkur fetch Amir Sëjaa and his wife, who find their daughter awaiting them. The princess is rather surprised at the looks of the jungle-dwellers, but at a sign from Rakna Mala renders them obeisance. Nilawati bathes Sëlamih and restores her former beauty. Sëri Maharaja Putëri gives Sëlamih dresses and jewels and asks Nilawati to rejuvenate also Sëjaa and his wife, but Bustamam objects, as they must first go to the court so that everybody can see what they have suffered. Nilawati agrees, and departs, having given Sëri Maharaja Putëri a magic ring, and having warned the fairies to stand by her children in the difficult times that are to come. The fairies take back Sëjaa and his wife to the house of Bustamam; Sëlamih stays with Sëri Maharaja Putëri.

Johar, instructed by Bustamam, brings Sëjaa to the hall of audience and introduces him with a few words to the viziers. Sëjaa prefers his charge that Bahud had pressed him and his wife into his service as coolies, whereupon Sultan Yahya had carried off his daughter and sold her as a slave. It had happened 15 years ago, but he had so far been unable to prefer his charge, as he had not known the king. Aplus laughs: Tewangga thinks that the matter is so old and incredible that he would like to dismiss it, but after his

recent experience has not the courage to do so unless the other two viziers agree. They do, although Tewangga reminds them to be careful, as the boy who has brought the old man hither has already played a part in the affair of the dagger. Aplus, however, tells Sējaa that the matter is too old, and Sēri Maharaja Putēri and the audience agree. Johar says to Sējaa, he should come away with him and try and find justice elsewhere; here they were progressing by leaps, and that was injustice. The viziers ponder over these words; Sēri Maharaja Putēri asks them to try to find a way. Sējaa must repeat his tale; he narrates what happened to him and his wife; a few days later the king had carried off his daughter and sold her. Aplus suddenly remembers Sēlamih and changes colour; Tewangga observes this and remarks that the boy must have dropped from heaven to point out their faults. He asks Sultan Yahya whether he has a brother-in-law Bahud, and has Bahud called. Bahud pretends not to remember anything, but Tewangga's method and the warriors with the drawn swords force him to confess. Tewangga praises the boy who has saved them from dismissing the case opining that the three questions the other boy had asked were hinting at some other foolishness of theirs, whereat Rakna Mala laughs. Sultan Yahya has to give evidence; he knows nothing of what Bahud has done, but admits that he has found the girl and married her. After four months she had disappeared, and his search for her had been vain. Sējaa asserts that she has been sold to a man from Malabar called Kakaduni, the mate of a ship from Sērindit. The Khatib and the witnesses of the marriage are called, and the validity of it is proved beyond question. Tewangga says that there can be no question of a sale; Johar opines that being duly married she had surely not run away and besides, she had been quite young. Tewangga agrees. Messengers are sent to Bandar Amasad to fetch Kakaduni, and at the suggestion of Johar, also the captain and the crew of his ship.

Bahud is examined and is told that instead of pressing people into service, especially a woman, he had better have given his own horse to carry provisions for the king; he is not worthy of the rank of Amir, but should be a cattledriver. He is delivered to Sultan Yahya to be punished and he is imprisoned together with his son, to the great fury of the queen, who curses the viziers.

Tewangga asks Sējaa, whether his family would stand bail for him that he would not run away. Sējaa says he has no family, that he lived formerly in Damshik, but has now moved to the frontier of Sēmatrani. Tewangga asks Amir Ismael whether he knows the man; Ismael denies it. An officer of Damshik is called; he recognizes Sējaa, runs to his prince and tells him that the old man is his elder brother. Amir Ismael changes colour and sends for another officer who also recognizes Sējaa. Ismael instructs them to lie, but Tewangga and his warriors make them confess that the old man is Amir Sējaa, the eldest son of Amir Thalib, and the brother of their prince. Tewangga assigns him a place amongst the other

princes and tries to find out why he left his country and has come to such a state. Sējaa replies that it was the will of God; and Ismael says his brother had wanted to devote himself to pious living. Tewangga has Sējaa bathed and dressed, and by order of Bustamam Chēkur gives him back his strength and looks. Returning to the hall Sējaa would render obeisance to Sēri Mahara'a Putēri but she refuses to accept it from an old man. Tewangga says that some crime of Ismael must be behind it, otherwise where would be Sējaa's share in the treasures which Amir Thalib, being a mighty prince, must have left at his death? Where was Bustamam? Johar replies, as Bustamam had instructed, that he returned to his village when he received his dagger. Aplus hears this and is very uneasy.

Sultan Yahya is very uneasy about the coming trial. Bustamam takes Sējaa and his wife every few days to the palace of Sēri Maharaja Putēri, where Sēlamih is slowly forgetting her past sorrows. To the queen of Bēdērani, when she visits her daughter, Sēlamih is introduced as a trusty maid who has come from one of the villages. With the consent of Bustamam Sējaa informs Rakna Mala and the princess who Johar and his friends are.

Kakaduni and his ship are found at Sērindit, and sent to Bandar Amasad, and the whole crew is brought to Tahta Yemen. The case is opened again, and Sējaa is called. Bustamam asks Johar to accompany him and gives Chēkur the bill of sale to show Kakaduni at the right moment. Taniasin examines Kakaduni, who at first does not remember anything; but being sent with the other men from Malabar to a room in the pa'ace to think the matter over, he opens his bundle, and Chēkur slips the letter into it. Then things come back to Kakaduni: he repairs with his friends to the court, and declares that it is true that he bought a girl called Sēlamih from Sultan Yahya for 20 dirhams. He produces the bill of sale, which is shown to Sultan Yahya. The Sultan recognizes his seal, and the handwriting of Bahud, and black in the face returns the letter to Tewangga, saying that it is his seal, and that he must take the consequences, but that there were still ways to search further into the matter. Taniasin understands that there is something more behind, gives the bill of sale to Aplus and asks him whether he knows the handwriting. Aplus does not want to express an opinion but says that there is something more, and Tewangga leaves further investigation to him. Kakaduni narrates how he bought Sēlamih, who was already with child, describes the two women who sold her, though he does not remember their names, and tells what happened until he put her ashore. The captain and the crew confirm his statement. All pity Sēlamih, only Sējaa remains unmoved, and Aplus suspects that Sēlamih is still alive, and Bustamam her son. Sultan Yahya remembers that Kakaduni's description of one of the women fits Sēlina, the first lady of the court of his queen, and has her called. Kakaduni recognizes her and she declares that she sold Sēlamih by order of the queen, and that Bahud had written the bill of sale and without authority sealed it with the king's seal. Bahud

is placed in the sun to await his sentence which the Sultan leaves to the viziers. Sēlina states that Sēlamih was with child, and that this caused the queen to have her sold.

Tewangga is of opinion that Sēlamih is alive, and an expedition is sent to search for her. Kakaduni, who refuses compensation for the purchase-money he has lost, as he had given Sēlamih liberty of his own free will, is given rich presents, and so are the captain and the crew of the boat. All ships of the Malabar-people from Sērindit are made free of port-dues. The men from Malabar accompany the expedition. Tewangga proposes that the sentence on Bahud be suspended until they know the result of the search, as he is sure that Sēlamih is alive.

Sultan Yahya returns to his palace, has the queen called and would kill her, but Aplus throws himself at his feet and begs him to have patience, as he is sure that Sēlamih is alive and not far off that Bustamam is her son, and that Jamlus, his own son, is with Bustamam. The Sultan becomes more composed, but the queen and Sēlina are kept prisoners in chains and neck-irons. The queen learns that her crime against Sēlamih has come to light and is in a great fright. Aplus stays with the Sultan during the night and compels him to discharge his duties as usual during the following days.

The expedition finds the man with whom Sēlamih had stayed one night; he is sent to Tahta Yemen, examined and receives rich presents. When they reach the realm of Maharaja Thēlahut, the king, knowing that the expedition has been planned by Bustamam to make sure of the fate of Sēlamih and his own parentage, assumes the shape of an old man and tells the leader of the expedition that about 15 years ago he had met a pregnant woman, who in the house of Zahid Sañan had given birth to a son; he does not know whether she is still there. The expedition reaches the house of Zahid Sañan, who is just starting for Tahta Yemen to look for Bustamam. He confirms that the woman gave birth to a son in his house, who later went to Tahta Yemen to search for his parents. He accompanies the expedition to Tahta Yemen, is examined and states that Sēlamih, the daughter of Amir Sējaa, grand-daughter of Sultan Thaliō and the lawful wife of Sultan Yahya, had given birth to a son, but a year later had been carried off by a warrior from Sēmat-rani called Jēpa. As she stood under the special protection of God, he had felt no anxiety about her fate, and had brought up the boy, whom he had called Bustamam. Tewangga would have Sēlamih fetched by a special embassy; the Zahid smiles and replies to Tewangga's question that in his opinion Sēlamih must be here in Tahta Yemen. Tewangga agrees and looks at Sējaa, whose face remains unmoved.

Tewangga now asks for the sentence. Sultan Yahya admits that he is guilty. The Zahid asserts that the Sultan is innocent, and Maharaja Bēniasin agrees, but Sultan Yahya has conferred power on people who were not worthy of it, and they being members of

his family (*milik*), he is guilty of negligence. Sultan Yahya offers to pay the price for the culprits, whom nobody else would buy, to Sēri Maharaja Putēri. The viziers ask how high the price would be, and who is going to receive it. Maharaja Bēniasin replies that the heirs of those against whom the crime has been committed have to receive the price, and also to fix it. Sējaa leaves every thing to Sēri Maharaja Putēri. She complains that though she is ignorant of the law, such matters are forced upon her. How many culprits where there? Sultan Yahya answers, two, with their two children, who are to be sold. Sēri Maharaja Putēri orders the viziers to bring the culprits to her palace on the following day. She will not accept any excuses; it is wrong to entrust power to people who abuse it. She does not know yet how she is to punish such doings which bring disgrace and ruin not only upon the thoughtless people themselves but also upon all those who are serving the state but anyhow she will dismiss the culprits from their office. Sultān Yahya delivers his crown and seal to the viziers, who give them to Rakna Mala. Sēri Maharaja Putēri would also settle the case of Amir Sējaa, and giving the crown and seal to Taniasin, says that with the realm of Sēmatrani she pays the debt. Sējaa shall be crowned forthwith and repair to Sēmatrani to receive the tribute of the subject countries, and those of Bēdērani, which she would make good to its king. Sējaa dares not refuse the gift, and Sēri Maharaja Putēri bids the three viziers bring the people she has redeemed to her palace.

Tewangga shakes his head; he thought that he had crowned the daughter of the king of Bēdērani, but now the Lord of the World seems to sit on the throne, and he hopes to be permitted to die in his service. The king of Bēdērani tells the king of Sēmatrani that they better go home, they had fared as sugar that had dropped into milk. Sējaa returns with Johar and his friends and the Zahid. Ismail comes to Sējaa and asks his forgiveness; Sējaa replies that Ismail is not guilty, that it was only his fate. Bustamam welcomes the Zahid, and the fairies fetch Sēlamih to greet the Zahid. When she has returned to the palace, they discuss the coming events, and the Zahid prays for Bustamam.

On the following morning they repair, with the exception of Bustamam, to the hall of audience, where preparations for the coronation of Sējaa have begun. Tewangga draws Johar before the Zahid and asks him who the boy is, that had pretended to be a village-boy and had made fun of them. The Zahid laughs, bids Johar's friends approach, sprinkles water and murmurs a charm over them, whereupon they regain their former looks. Their parents hurry to embrace them, only Aplus does not show his great joy and continues the duties of his office. Taniasin asks him, and Aplus replies that Johar is really his son, but having now found his own master, he is nothing more to him.

Sējaa is crowned, and by order of Sēri Maharaja Putēri given the title Sultan Sējaa Amir Al-Amur.

Tewangga is still surprised at the wisdom of Sēri Maharaja Putēri, who had found the title of Amir Al-Amur: Aplus opines

that it is the blessing that rests upon her office which has inspired her, and is more perplexed by the three questions of Bustamam, the meaning of which he cannot fathom; Johar says that according to the Zahid Bustamam is still in the town, but perhaps does not appear because he is afraid of the viziers; they often act otherwise than they talk, and great men never confess their foolishness. Aplus tells the Zahid of the three questions. The Zahid laughs and says it is no common thief who steals a man's brains without his body feeling it. He then explains: If God sends one prophet into the world to teach mankind the faith, and later sends another to teach another faith, mankind must follow the new one and not cling to the old, which is disobedience to God. A prince who follows the will of his people is a man who prays to idols or fire, which we have created ourselves, and which cannot do anything for us and are even powerless against ourselves, as we can smash or burn idols or throw them into the sea, and with fire we can do what we like. The officers who cannot discern between right and wrong, or knowingly persist in wrong, are hypocrites and of these Bustamam is afraid. The viziers are ashamed, and the Zahid adds that one of the ancestors of the prince of Bědērani had received a sign and had sent out an official, who sent a report but had never returned. The report was still preserved, and they could read it. The fact that the moon had descended from the sky and risen again, had divided and the two parts had united again, was connected with a man of noble descent who was proclaiming the new law of God in Arabia. When he had not been believed, he had shown his power by that miracle. The Zahid himself intends to go to Arabia and find out more about that man. The Zahid explains the new dispensature to Tewangga with such convincing reasoning that the king of Bědērani and Taniašin are converted. Tewangga is convinced that praying to idols and the sun is idle, but does not say a word. The others know how hard the fight will be for him to vanquish his old beliefs, but trust that God will show him the right way. Tewangga passes a sleepless night, but when on the following morning the Zahid asks him to try to find in the new faith greatness and sublimity (as if he were unable to do so, he could always return to the former creed), Tewangga declares that he will follow the faith of the Zahid. He sends messengers out to extinguish the fires in the temples and destroy the fire-altars; when the Brahmans and Sages, who guard the fires, come terrified at him, he says that if the god they pray to cannot even protect himself against such action of men, how could he protect them? They should meditate on these words, and follow the new faith. Many of them do so.

In the palace everything is prepared for the meeting. The ladies of the high officials are also invited to witness the punishment of the culprits. Opposite Sěri Maharaja Putěri the kings of Bědērani and Sěmatrani take their seats, the three viziers behind them. Behind Sěri Maharaja Putěri her mother is sitting and

Sēlamih next to her, but so that only the king of Bēdērani can see her. The queen of Sēmatrani, her daughter and Bahrum Shah as well as Sēlina are brought in chains. The guards let the princess pass, the queen and Sēlina are detained by the maids at the foot of the staircase, and Bahrum Shah outside by the guards. Rakna Mala brings the princess to Sēri Maharaja Putēri, who pretends not to have noticed the commotion. Tewangga says that the guards are right, as there is no place here for chains and men, and Sultan Yahya orders that the queen and Sēlina be freed. They are allowed to pass by the maids and would sit down near the door, but Rakna Ma'a brings the queen to Sēri Maharaja Putēri, to whom she would render homage. Quickly Sēri Maharaja Putēri grasps her hand and says she may not wrong her by letting her commit a great sin. Crying the queen sits down, Sēlina is led behind her by Rakna Ma'a. Tewangga is greatly pleased with the latter and thinks her a proper match for Johar. Sēlina recognizes Sēlamih, whisper to her mistress, and the latter, too, recognizes her. Sēri Maharaja Putēri asks Sēlina whether she has not worried and beaten Sēlamih on their way to the port, Sēlina denies, and being asked whether she can bring a witness, throws herself at Sēlamih's feet, asks her forgiveness and to give evidence for her the queen of Sēmatrani also implores her forgiveness. Sēri Maharaja Putēri seems surprised that her new trusty maid is Sēlamih. She says that those who have wronged her and for their crime had been sold, had been redeemed by her, and she gives them back their liberty but the young princess she asks to keep as her play-mate. Sēlamih should not be angry with her husband, who is innocent. Sēlamih replies that nobody is guilty, as Fate has willed all. Sējaa and his wife, the Zahid and Bustamam and his friends are fetched to the palace, and there is great joy. Aplus throws himself at the feet of Bustamam and says he had had his suspicions from the moment that Bustamam had told him Jamlus had looked for a new master. He kisses Johar and says that he has not left him in vain. Tewangga sees that Rakna Mala is rather shy with Johar, and remarks: "Somebody has stolen a march upon me." When Bustamam renders obeisance to the king of Bēdērani, Taniasin opines that now he will enter his service; the others understand, but are much afraid that Tewangga will find them out. Sēlamih kisses Bustamam, who will not render her homage, in spite of the sign of Aplus, and Tewangga ponders what may be behind that. Sultan Yahya renders obeisance to Sējaa, who gives his crown and seal to his son-in-law, saying that he had accepted the realm as a gift, but being to old and ignorant of matters of state. Sultan Yahya should rule in his stead. All wonder at the sagacity of Sēri Maharaja Putēri. Sultan Yahya asks Bustamam to render homage to Sēri Maharaja Putēri, but he declines and Sēri Maharaja Putēri says smiling, it would be useless to force him.

Tewangga remarks that they have obeyed the will of his master and crowned the princess. But now there is somebody, who

disobeying the king of Sēmatrani declines to render her homage. The kings are silent, and Sēri Maharaja Putēri and Rakna Mala fear that a quarrel will arise. Tewangga opines that by not rendering homage to his mother Bustamam had shown that it was forbidden to him (*pintangan-nya*) to render homage to any woman. Angrily he asks the two other viziers to accompany him home, as there are many things to settle. Taniasin objects as Sēri Maharaja Putēri will offer them a meal. Tewangga replies that he has already eaten and feels filled to satiety. Johar remarks to Khamis that that was a very true word, and Khamis should keep his ears open, as there were many lessons to learn this day. He explains that Sēri Maharaja Putēri had just decided that a man who would not render her homage should not be forced to do so, as she was neither richer nor poorer by it, and thus one would suppose that it would not be right to force a person to eat who had already had his fill. But apparently it was right, as Sēri Maharaja Putēri intends to force Tewangga, who has already had more than his fill, to eat some more! Tewangga laughs and begins joking with Johar, whose ready wit surprises Aplus.

When matters had taken a serious turn, Sēri Maharaja Putēri had sent for mother Sokma in the hope that she would be able to divert the vizier from his anger. The old dame arrives and first comes into conflict with Bahrum, who, she has heard, has been redeemed by Sēri Maharaja Putēri. She would ask the princess to make her a present of him and promises him happy times as her servant. Johar then chaffs her, and she blurts out that the spring in the palace is the work of Bustamam. Tewangga hears this, and though Sēri Maharaja Putēri tries to interfere, most skillfully draws the old woman out and hears how Maharaja Bēniasin has been compelled to accede to Kerba Bahur's demand and how the princess was afraid of the Gērgasi, the son of Kerba Bahur, but that this fear has vanished since Bustamam has come into the palace. Bustamam laughs at the old woman. Sēri Maharaja Putēri, too, seems much abashed, whereat Tewangga wonders. The Zahid knows the reason, but remains silent.

A meal is served. Rakna Mala serves the royal families, but when she comes with another tray, Johar jumps up and takes it from her. She hides her confusion by talking to mother Sokma. Tewangga is told that there is nothing unclean in the food or the drinks, and that even the dishes and vessels have been changed. Aplus hopes that he will not suffer by not having his usual drink, but he will soon learn to go without it. Tewangga, of whom most of the others are afraid, seems quite at ease; he chaffs Johar and Rakna Mala, asking the latter whether she had promised Bustamam his reward, and why she has not given it to him. Timidly she replies that the promise had been given in Bēdōrani; being now in Tahta Yemen she had no means to fulfil it, and Tewangga should help her. When Tewangga hears that a headkerchief has been promised as a reward, and that Tewangga will know best what kind

of headkerchief would be suitable for him, he asks Johar, what kind Bustamam would like best. Johar replies that when the reward was promised, there was no question of what Bustamam would like, but Tewangga should do what he considers best, as he will have to take the blame for it. Tewangga asks what blame could be thrown upon him. He adds laughing that when he talked of being blamed he had referred to Bustamam having refused to render homage to her to whom they had all rendered it. Why did Johar talk of blame for choosing a handkerchief. Johar replies that in his opinion it is the same problem. Tewangga asks where Johar has learned such tricks: Johar says from Tewangga himself.

When they have finished the meal, Tewangga asks Sēri Maharaja Putēri, who it is that has invented the title of Amir Alamur, and when he hears that she got it from Bustamam, enquires if she had not forgotten to add Had As Sa'athin'. Sēri Maharaja Puteri says not. Tewangga had suspected that Johar invented the title and had promised to punish him, whereupon Johar had denied it. He now says that Johar has saved his neck, but he would put a chain round his feet. Johar replies that it would not matter to him whether his neck or his feet are put in irons, and Tewangga asks Taniasin to give him Rakna Mala to hold the end of the irons so that Johar could not escape. Taniasin places not only his child but himself at Tewangga's disposal, and ask the Zahid to marry the young couple. Johar objects, as he has to accompany his master on a voyage. Bustamam explains that he has to go to the mountain Thēlahin to bring back the two fairies, which he promised to do as soon as he had found his mother. Jērangau and Chēkur appear at a sign from Bustamam behind Sēlamih, and the viziers wink. Tewangga says, Bustamam must explain first why he would not render homage to Sēri Maharaja Putēri. He knows very well that Bustamam wants Sēri Maharaja Putēri to render homage to him, and they, the three viziers, agree. Thus Bustamam is safe, but he must also bring them into safety. If Tewangga's master hears that he has deserted him in this matter, he would have him put to death, and all he would ask Bustamam is to have him buried and not cremated. Tewangga asks Taniasin and Aplus to arrange with the kings the betrothal of Bustamam and Sēri Maharaja Putēri. Maharaja Bēniasin fears the anger of Bachtiar and Kerba Bahur: Tewangga replies that he does not care for the former: the anger of Kerba Bahur he will take upon himself: what he intends to do, is not disobedience to his sovereign. He was looking for means to justify his action to his master, and they should therefore grant his request, as the Zahid is present and can betroth the two. Maharaja Bēniasin agrees, but leaves everything to Tewangga, and will take no responsibility. The consent of their parents would be sufficient for Sēri Maharaja Putēri ordinarily, but as she is a ruling

¹Grandfather of the King.

princess she had better also give her consent. Sēri Maharaja Putēri protests: Bustamam had promised to deliver her from the giant, but if he is asking her in marriage, she feels not the least inclination to consent. Raka Mala is her witness, and if she had suspected that Bustamam had such intentions, she would never have allowed him to enter her palace. Bustamam had always treated her as his younger sister, and it is wrong of him to ask her in marriage. Tewangga should take her away, and if it must be, to Kerba Bahur, who could put her to death if it pleases him. Crying Sēri Maharaja Putēri withdraws into her bedroom. All are dumfounded, but the Zahid says that now they could see the kindness of God, who had allowed those two children to live together in an intimacy, without any unlawful doings. God has preserved them from sin and made them grow up like brother and sister, while the amulet written by the Kathib AlAalam, too, had helped them. Tewangga also declares that he is convinced no wrong has been done. Zahid Sañan explains how the Khatib AlAalam had appeared before Sēlamih and written the amulet and blessed her bundle and the dagger. Tewangga snatches the dagger from Bustamam (who has just time to mutter a charm so that it cannot harm Tewangga) and tries the dagger on the ground before the palace, whereupon a spring appears at once. Rakna Mala is sent to tell Sēri Maharaja Putēri that the three viziers threaten to return to their countries and leave her to her fate if she insists in thwarting their good intentions. Johar tells Rakna Mala to explain to her. Rakna Mala succeeds in coaxing the princess to come out again, and Tewangga persuades her that all is done for her good, as it will justify Tewangga's action in the eyes of his master, and prevent Bachtiar from coming to Tahta Yemen, if they can spread the news that Sēri Maharaja Putēri is engaged to somebody else. The princess still objects, that Tewangga, who has made her ruler, now wishes to give her somebody to rule over her, but when Tewangga explains that she would rule as hitherto, and that his master's command had been to crown only her and nobody else, Sēri Maharaja Putēri consents, and the Zahid reads the bethrothal-service. Sēri Maharaja Putēri takes hold of Bustamam and reprimanding him severely for his intrigues, makes him render homage to the queens and his mother. The Zahid prays for the happiness of the young couple and their descendants. Aplus ask him about the old man he met while searching for the parents of Sēlamih, who had told him that the time to find them had not yet come, and had further told him that two children would be born to Sultan Yahya. The Zahid explains that he had only referred to boys, and Aplus recognizes in him the old man. The Zahid further explains the dream of Maharaja Bēniasin: had not their old faith been destroyed, and had they not all found the way to salvation? Mother Sokma appears again, and being told of the two engagements, is afraid that the other three friends of Bustamam will be caught too. She joins the little fingers of Bustamam and Sēri Maharaja Putēri (*bērkait kēlingking*).

The viziers discuss the letter to Kerba Bahur, which is composed by Johar. In it Tewangga reports that the king of Bêdêrani had followed his daughter to Tahta Yemen, where the princess had been crowned in obedience to Kerba Bahur's order. She had been inconsolable over the death of Serjana and had remained silent when the other letter arrived that she was to marry Bachtiar, but Tewangga had perceived that her sadness had increased. He had questioned her father, who had replied that he had given his daughter to Kerba Bahur. But this was said out of fear of Kerba Bahur. The princess had accepted the regency on condition that the three viziers should determine all cases of law, and that the two kings should administer justice. The court of justice of Tahta Yemen had become famous, but to maintain the tradition was costing troops and money. The princess had asked Tewangga to inform Kerba Bahur. The letter is approved by the viziers, and Johar with his three friends accompanies the messenger to Tahta Yemen. Bustamam bids Jêrangau protect them.

The Zahid, loaded with presents, is escorted to his village, and Amir Alamur is sent with great pomp to Sêmatrani. Amir Alamur, as soon as he has reached Sêmatrani, sends troops from there and from the subject countries to Tahta Yemen.

Tewangga's embassy reaches Kaladesa; Kerba Bahur is pleased with the letter and orders troops, funds and presents to be sent to Tahta Yemen. He sees Johar, who pretends to be sent by Sêri Maharaja Putêri to buy her baubles at Kaladesa, comes to like him and orders him to choose for Seri Maharaja Putêri whatever he likes.

Johar meets Bachtiar, is recognized by him, and follows him to the audience-hall. Kerba Bahur gives him the letter, which so far only he himself has read. Bachtiar thinks that Tewangga does not want him at Tahta Yemen, but as he has heard that a prince from beyond the sea is coming as a suitor for the princess, he proposes to go and guard her. Kerba Bahur does not agree. Bachtiar is much too passionate and better wait. Bachtiar insists, as the princess is his fiancée. If Tewangga gives trouble, he will drive him off. Kerbabahur however, forbids him to go to Tahta Yemen: when the time comes he will take him. Angrily Bachtiar leaves the audience, and ask Johar further news about Tahta Yemen. Johar exaggerates the influence of Tewangga, of whom even Sêri Maharaja Putêri is afraid, and insinuates that reinforced by funds and troops he might become dangerous. Bachtiar flares up, and the following morning goes again to the audience-hall. He meets the ministers, but they are sure that Kerba Bahur will not consent. They advise him to have patience and not to irritate his father. Bachtiar replies that he does not fear the anger of the old madman, and goes into the palace. Kerba Bahur, sees him and discusses with his ministers what he is to do, as he fears Bachtiar will disgrace him.

Bachtiar finds his mother talking with the mother of Serjana. When he explains his wish, Serjana's mother warns him against the

princess, who is a woman of ill omen (*pilek*) and has already caused the death of her own son. Bachtiar answers rudely. When she says that Bachtiar may kill her and so reunite her with her son, but that she has spoken only with the best intention, he furiously grasps her hair, and she knocks her head on the steps of the throne, and dies. Bachtiar escapes into the jungle and decides to go to Tahta Yemen, which is fortified and wait there until his father's anger has abated. He will take his cousins, Dendam Siwati and Dendam Kiwabi, the sons of Maharaja Tesnahur, to intercept with them and their troops the reinforcements and funds which Kerba Bahur is sending to Tahta Yemen. Maharaja Tesnahur is the younger brother of Kerbabahur and king of Siukam. Bachtiar sends him a letter that Tewangga has obtained strong magic powers in Tahta Yemen, has brought Kerba Bahur under his influence and is swindling him out of his troops and his treasures, and that he has tried in vain to dissuade his mad father from following the wily vizier. When he had discussed the matter with his mother, Serjana' mother had tried to murder him, and when he had thrust her back, had smashed her head on the steps of the throne. He asks that his cousins may help him with troops. He would then go to Tahta Yemen, do away with Tewangga, and bring his bride to Tesnahur.

Tesnahun believes Bachtiar and sends his two sons with the troops. Tewangga is to be punished: the troops and treasures, when captured, they shall bring to him, and he himself will take them to Kerba Bahur and inform him of Tewangga's treason. Another army shall follow.

Kerba Bahur sends the troops and monies to Tahta Yemen and a special messenger with a letter to Tewangga, informing him of what has happened and asking him to give sound advice to Bachtiar, if he should come to Tahta Yemen. Johar asks permission to return with the messenger to Tahta Yemen, which is graciously granted, and given a letter to all and everybody to assist him on his voyage, and an invaluable jewel as a present for the princess. On their way to Tahta Yemen they meet Siwati and Kiwabi, are examined but allowed to proceed. When the two princes meet Bachtiar, he asks them to go with him at once; they would have preferred to await the second army, but by his jibes he forces them to follow him. Kerba Bahur is informed of Bachtiar's intentions and curses him that he shall be unlucky wherever he comes. Bachtiar hears and makes fun of it; his cousins don't like his behaviour, and inform him that they have met a messenger carrying a letter from Kerba Bahur to Tewangga. Bachtiar has him captured, takes the letter from him by force and destroys it. Johar and his friends, who have come to Bachtiar's camp have seen this, and in the evening Johar pays his respects to Bachtiar. He regrets that Bachtiar had not informed him of his departure, otherwise he would have gladdened Sēri Maharaja Putēri's heart by the news of his coming, and would have enabled her to make preparations for his

reception. Bachtiar, flattered, tells Johar of his intentions, and Johar advises him not to worry about the wrath of his father, who is an old man: Sèri Maharaja Putèri, if she hears that Bachtiar has now taken matters into his own hands, will be glad to get rid of Tewangga, whom she fears. Bachtiar should not intercept the troops and treasure now, as Kerba Bahur is only a short distance away, but close to Tahta Yemen, which would allow him to take his booty there and to finish Tewangga. Bachtiar agrees, but his cousins fear that their troops will not fight against Tewangga himself. Johar perceives with dismay that Siwat and Kiwabi are not such fools as Bachtiar, but opines that the troops will rather follow their prince than the vizier, and on no account will fight against their prince. Johar receives permission to leave for Tahta Yemen in advance in order to inform Sèri Maharaja Putèri of Bachtiar's coming.

At Tahta Yemen Johar makes his report, and Tewangga thinks that they must oppose Bachtiar. Sèri Maharaja Putèri and the two kings leave everything to him, and he sends troops to meet the reinforcements with a letter to their commanding officer and other troops which are to prevent the army from Siukam from following Bachtiar's orders. With Bustamam's consent, and protected by Jèrangau, Johar and his friends depart as scouts, taking a bottle of perfume from Bustamam, and some victuals. They march to Bachtiar's camp, and Johar gives Bachtiar the perfume and the victuals, which Bachtiar accepts as presents from Sèri Maharaja Putèri. The troops from Kala Desa arrive; their leaders refuse to appear before Bachtiar, as they have orders to march to Tahta Yemen. Bachtiar orders his cousins to bar the way and to bring the leaders to him if they will not obey. They object, as they will lose their good name if they act like thieves taking away the treasures of his father; they prefer to follow the troops to their destination, and if Bachtiar there shall ask for the treasure, nobody will refuse him. Bachtiar calls them cowards, and in their fear they promise to obey. The leaders of the army from Kala Desa refuse to obey Bachtiar, in the jungle there are no princes, and the sword is king. Fighting begins. Johar reports by letter to Tahta Yemen, and Tewangga decides to hurry to the spot; Bustamam insists on accompanying him. Bustamam declines horse and carriage, and marches with Khamis and Saptu, who had carried Johar's letter to Tahta Yemen, to the camp of Bachtiar. The guards let them pass when they say that they belong to Johar, and they go to Bachtiar's tent. Bustamam, who stays outside, is surprised at the appearance of his enemy. Khamis and Saptu pretend that they have come to warn Johar lest he may fall into the hands of Tewangga, who is keeping a strict watch. Bachtiar laughs and repeats his order to capture the leaders from Kala Desa. The latter again refuses to obey Bachtiar's orders; princes and viziers command in the town, but not in the jungle. Bachtiar's officers cannot but agree, but when they report to Bachtiar, he cuts down a few of them, and the rest

prefer fighting in a battle to being cut down by their prince. Fighting begins in earnest; a few men from Kala Desa are captured, and Bachtiar has then impaled. He sends his last troops against those of Kala Desa, who fall back. Bustamam joins in the battle, merely kicking the warriors of Bachtiar when they come too close. Johar and his friends come to help him, cutting their way through Bachtiar's troops, and the men from Kala Desa, thinking that Tewangga has come to their aid, attack with fresh vigour and press back Bachtiar's troops. Bachtiar hurries to the fight. All flee before him; only Bustamam and his friends remain where they are. Bachtiar asks what they are doing here; boys should watch such play from the tents. With the sheath of his sword he aims at Khamis, who avoids the blow and would attack Bachtiar with his sword. Bustamam grasps his hand and asks him whether he does not know His Majesty? Johar explains that they had come only to see the fight, but had been attacked. Bachtiar asks them to follow him to his tent. The fight lasts until the evening without success for either party. In the night Tewangga arrives, and decides to join the troops from Kaladesa by going round Bachtiar's army. He is heard by the guards, who report to Bachtiar, and the latter thinking the troops from Kala Desa are trying to pass through, orders his troops to bar the way. But they get behind Tewangga, who meets the troops from Kala Desa and hears their report with great sorrow. He camps with them, while Bustamam and his friends stay over night in Bachtiar's camp.

Siwati and Kiwabi propose to fetch the second army from Siukam. Bachtiar agrees, but only one of them may leave him. Kiwabi departs, meets Tewangga's troops and asks to see the viziers. Tewangga declares that for him there is only one master, and he cannot let Kiwabi pass. Kiwabi, in fear, asks to be allowed to return to Bachtiar. The latter arranges his troops in echelon on the jungle road, and (Kiwabi and Siwati to his right and left) waits for Tewangga. The troops from Kala Desa arrive, and the battle begins. Tewangga is unable to advance. Bustamam orders Johar and his friends to assist Tewangga's troops. Made invisible by the fairies, he assists a knight of Tewangga, who otherwise would have been slain, to capture Siwati. From the order of the knight to bring the prisoner to Tewangga, Bustamam learns that the latter has joined the troops from Kala Desa.

Kiwabi, hearing his brother's fate, attacks Tewangga's troops and drives them back. Bustamam, still invisible, wrests his sword and mace but has to assist Tewangga's knights in capturing him, as Kiwabi's strength is too much for even four or five of them. Kiwabi is brought to Tewangga and kept with his brother.

Bachtiar tries to free his cousins. Tewangga forbids the killing of his master's son, and orders that he be taken alive. Lassoos are of no avail, as Bachtiar's horse is trained to avoid them. Bustamam wonders at Bachtiar's strength when Tewangga approaches Bachtiar, he slips his dagger into the vizier's belt. Tewangga is startled the

dagger drops, but when it is slipped into his belt again, he recognizes it and knows that Bustamam is near. Bachtiar attacks Tewangga, but is unable to bring down his sword or his mace upon him. Furiously he asks Tewangga where he has learned such magic, and Tewangga knowing now what protects him, drops his shield and orders his knights to surround Bachtiar. The fighting stops, and all wonder at Tewangga's daring. Bachtiar attacks the vizier with his Khanjar¹; Bustamam takes up Bachtiar's sword, which the latter had dropped as useless, and cuts down Bachtiar's horse. Bachtiar falls; Bustamam is unable to keep him down, and Bachtiar jumps up again and attacks the knights with his mace. They flee, only Johar and his friends remain, and Khamis jumps before Johar, ready to cut the mace with his sword. Bachtiar is alarmed at the sight of that sword, and demands what the boy of ill omen is doing there. Johar replies that Bachtiar himself has invited them to witness what he would do with Tewangga. Tewangga laughs, Bachtiar attacks him again, but Bustamam from behind wrests his mace, and Bachtiar falls on his back. A knight jumps on his chest, but is torn to pieces, and Bustamam can only keep Bachtiar down by pressing his heavy mace across Bachtiar's throat. Bachtiar tries to get away; Tewangga presses down the other end of the mace, and two warriors seize Bachtiar's hands. Face downwards, with sand and dust in his mouth and nose, Bachtiar gives up the struggle requests Tewangga not to bind the son of a master, whom he has to thank for everything. Tewangga replies that Bachtiar has not acted like a prince, but like a thief. If Bachtiar will behave like a prince he will do homage to him. Bachtiar answers that in coming to Tahta Yemen he had no other intention but to receive Tewangga's homage and to load him with presents. Tewangga promises to render him homage when Bachtiar has returned to his parents and follows their instructions. Khamis scoffs at Bachtiar for the follows their instructions. Khamis Scoffs at Bachtiar for the spectacle he has invited them to witness, and when Bachtiar threatens him, Johar tells him to take care that he is not bound and made prisoner like his cousins. Bachtiar is frightened and promises to return to his father; his cousins he will take with him. Tewangga refuses: he will set the princess free if Bachtiar brings him a letter from his father with that instruction; meanwhile he will keep them as hostages for the good behaviour of Bachtiar. The latter promises to mend his way, and is allowed to return to his camp. Johar and his friends follow, and when Bachtiar's men start bragging, the boys ask them why they did not help their master when he was lying on his belly in the dust like a crocodile. Some say that Bachtiar had suffered himself to be vanquished in his pity for Tewangga, his father's trusted servant. Bachtiar confirms this and adds that Tewangga in his fear had promised to crown him as reigning prince if only he would return to his father. Johar and his

¹A cutlass.

friends are expelled from Bachtiar's camp and join Tewangga, who in the meantime has met Bustamam. Together they returned to Tahta Yemen, passing Bachtiar on the way.

Bachtiar meets the army of Siukam and asks the commander to follow him to Kala Desa. The gates of the town are closed, Bachtiar sends the warder of the gate to ask his father for an audience. The warder reports how Tewangga has frustrated Bachtiar's plans and has captured Kiwabi and Siwati. Kerba Bahur refuses to see his son, and Bachtiar marches to Siukam. Tesnahur receives him, and crying Bachtiar reports how Tewangga has abandoned their old faith, and acquired magic which enabled him to capture Kiwabi and Siwati and even himself. His cousins were treated shamefully by Tewangga, who had refused to set them free unless he received a letter from Bachtiar's father. He had abstained from further fighting, but is willing to march out again and annihilate Tewangga. Tesnahur, in a fury, orders a letter to be written to his sons bidding them return at once.

On his return to Tahta Yemen, Tewangga is received with great honours. Before he reached the town, he has freed Kiwabi and Siwati, has clad them in princely garments, and in sedan-chairs they are carried to the hall of audience, whilst Tewangga, joined by Aplus and Tantiasin, follows on foot. He renders homage to Sēri Maharaja Putēri and the kings, and makes Kiwabi and Siwati do so. The kings embrace and kiss the princess. Tewangga reports, praising Bustamam's help, which has enabled him to settle the matter without wounding his master's heart. The kings understand what he means.

Kiwabi and Siwati are given a house and their own little court, and Aplus is to be their adviser and Councillor.

The three viziers together draft the letter to Kerba Bahur, reporting, that Tewangga had to act as he did to uphold the honour of his master, and that Bachtiar had been set free to obtain a letter from his father that Kiwabi and Siwati may be allowed to return. The letter repeats that the kings of Bēdērani and Sēmatrani are still mourning the death of Serjana and are so afraid of what is coming that they could rather retire into the jungle and live as hermits than witness the unhappiness of their child. Tewangga does not know what to do; he has to follow the orders of his master, but Kerba Bahur should compare the picture of the princess with that of Bachtiar, whose character events had shown in full light, and Kerba Bahur would surely change his mind. Tewangga and the two kings were awaiting his decision.

The letter is sent, together with another letter of Tewangga to Tesnahur regarding his two sons.

Kiwabi and Siwati are visited daily by the three viziers and by Bustamam and his friends. Kiwabi, the younger, shows signs of favouring the new faith, but Siwati remains reserved and inaccessible. When the messenger from Siukam arrives, he is brought before the two princes and hands them the letter of Tesnahur.

Kiwabi is of opinion that their father misunderstands the situation; they are prisoners of war, and their father must either beg for their release, or rescue them by force. Siwati thinks they are free to do what they like, and suggests that they show the letter to Tewangga. Kiwabi says that the honourable treatment they have received binds them more strongly than prison, fetters and guards, and even if Tewangga allows them to follow their own choice, Siwati may return, but he himself will remain at Tahta Yemen. They go to Tewangga and show him the letter; he reads it and returns it in silence. Siwati asks him whether they should return or not; Tewangga laughs and says he should do what he thinks right, and if he does not know it, should ask his younger brother. Siwati leaves Tahta Yemen, whilst Kiwabi remains.

Tewangga's letter reaches Kerbabahur, who replies condemning Bachtiar's doings, and renouncing him as his son. He approves of everything Tewangga has done and sends his vizier Sējan Bada with 500 officers and 4000 men to assist Tewangga. If the viziers can find another prince whom they and the kings deem suitable, they should marry him to Sēri Maharaja Putēri crown him as king of Tahta Yemen and watch carefully over his two children. Bachtiar he had torn out of his heart. He had deserved death by killing Serjana and her mother, and should be treated without any consideration if he came to Tahta Yemen. His two brothers (the kings of Bēdērani and Sēmatrani) should remain, if possible, at Tahta Yemen, and watch over his and their children: he would provide for their wants.

Sējan Bada departs with his whole clan; he asks the two viziers who remain with Kerba Bahur to watch over his old master and inform him at once if danger threatens him.

Tewangga's messenger reaches Siukam and gives Tesnahur the letter. Tesnahur gives it to Bachtiar, who tears it up, saying that if Tewangga does not send the princess back with the troops who have gone to fetch them, he should wait for Bachtiar himself, as he would not be satisfied unless he had boxed Tewangga's ears. That reply the messenger should deliver to Tewangga; a letter he would not send. The officer replies that the letter was addressed to Tesnahur and not to Bachtiar, who, not better than a corpse on the battlefield, had begged Tewangga to spare him fetters and neck-iron, had promised to mend his ways, and had left his cousins as hostages. Bachtiar should brag before Tewangga and not here. In a fury Bachtiar draws his sword; the officer remarks that this is not a place for fighting, and leaves without paying homage.

Bachtiar persuades Tesnahur to assist him in crushing Tewangga, and the princes subject to Siukam, the kings of Gujerat, Jēzam, Siulan, Sētin, Basmit, Kēmusat, Sēmbals, Guha, Jusī and others are called up with their armies. The letter to the king of Gujerat says that Tewangga is planning treason, had caused all the fighting

and the death of Serjana, and that in the interest of the dynasty it is imperative to destroy Tewangga and make Bachtiar the ruler of Tahta Yemen.

The troops of Siukam arrived with Siwati, who reports that Kiwabi has remained at Tahta Yemen of his own free will. They had been treated honourably, but Tewangga has abandoned their own religion and is following the faith of Bustamam, the son of the king of Sēmatrani, whom Tewangga would surely crown as ruler of Tahta Yemen. Siwati has met Sējan Bada and knows that Kerbahur has agreed to another prince being married to Sēri Maharaja Putēri and crowned as king of Tahta Yemen. At this report Bachtiar throws himself on the ground and howls so that the whole town hears it. Tesnahur renews his promise to help him; Siwati warns him that Tahta Yemen is very strong and the viziers are so wise and strong in magic that even Bachtiar had been defeated. Tesnahur is rather taken aback, but decides that they may not suffer Tewangga to become their master, and their religion to be destroyed.

Sējan Bada reaches Tahta Yemen, is received with great honours and approves of everything Tewangga has done. Everybody is pleased with Kerbahur's letters, and Tewangga is praised for his sagacity. Kiwabi decides to remain at Tahta Yemen, and before the full audience Sējan Bada and Kiwabi swear allegiance to Sēri Maharaja Putēri and to the constitution. Kiwabi is given the name of Raja Shah Malik.

The four viziers draft the report to Kerbahur, and Sējan Bada is introduced to Bustamam, Johar and their friends. They are invited to the palace, and Sējan Bada is pleased with Sēri Maharaja Putēri. After the meal Tewangga says that they now have to solve the difficult problem of finding a suitable husband for Sēri Maharaja Putēri. With enigmatic hints he intimates that with Kiwabi a new factor has entered into their plans, who may upset all their former doings. At first nobody comprehends him, until at last Sējan Bada understands the hint and says to Sēri Maharaja Putēri that the nephew of his master had come to her country, renouncing his home and his family, to stay with her for ever and serve her, and is now asking for a sign that the kings accept his trust. The king refers him to Sēri Maharaja Putēri, who says that the moment for a decision had not yet come, as first the viziers should agree amongst themselves.

The viziers ask for time to deliberate, and meet in the evening at the house of Sējan Bada, where Bustamam and Johar are also present. Sējan Bada says that he had asked Johar to explain to him the meaning of Sēri Maharaja Putēri's words; Tewangga replies that he should not have asked the pupil, but the master, meaning Bustamam. He relates how Bustamam has already made fun of him over the dagger, and with the question of the prince and the

vizier, of which the Zahid had given him the right explanation. They should try carefully to find out the meaning of Sēri Maharaja Putēri's words.

Sējan Bada is taken aback when he hears the Zahid's answers to Bustamam's questions; Tewangga remarks that he had been converted by them at once, and Aplus with his wisdom would be glad to assist Sējan Bada. They leave him for the night, but Sējan Bada keeps back Bustamam and plies him with many questions, all of which Bustamam answers, adding many wise teachings and advice, so that Sējan Bada is converted to the new faith. (The author adds that all these people have been converted so quickly because they were wise men, acquainted with the teachings of many religions, so that they wanted but a hint to distinguish between truth and falsehood.)

On the following morning the viziers meet again, and Sējan Bada tells the others that Bustamam had shown him the right way. They request the kings to begin with the wedding-festivities, invitations are sent to the subject princes; embassies are sent to fetch Amir Alamur and the Zahid. One day in the hall of audience, Tewangga bids Johar sit down next to him and reminds him of the day when his master had told him that he had as good a brain as the other viziers and should sit down with them. The work they are now busy with is the service of his master, and Johar should take it over and relieve the old viziers of it. Johar murmurs that Sēri Maharaja Putēri had given the order to them and not to him, and it is not right for them to back out of it. Tewangga laughs and says that Johar is right, but this time they will back out of it. Johar and his friends should get accustomed to the service of their master and should not form a separate party opposed to the old viziers. Johar takes over the work of preparing for the wedding. The two kings agree and smilingly reprove them for all their pranks: Bustamam must relate how and where he has found his friends. Tewangga takes the dagger out of his own belt and gives it to Johar to return to his master. Bustamam nods, and Johar goes down, thrusts the dagger into the ground and returns it to Bustamam. Water begins to flow, and when the excitement has ceased, is caught for the use of the palace and the public. The king of Bēdērani and Taniasin now guess where the well in the palace of Bēdērani came from.

Bustamam disappears into the palace, where all the ladies of the court are busy with the preparations for the wedding. The queen of Sēmatrani sits disregarded in a corner, and Sēri Maharaja Putēri does not even allow the princess of Sēmatrani to be near her. Bahrum Shah has his place with the pages and is made their laughing-stock.—Bustamam complains that he feels lonely, his friends being pressed into service by the viziers, and Rakna Mala is chaffed that she has been the cause of it in order to have Johar always near her.

Amir Alamur and the Zahid arrive with their wives, and Amir Alamur asks the king of Sēmatrani to pardon Amir Bahud and his son, as all they have done has been ordained by God. The king replies that the matter lies with the viziers. The viziers agreeing, Amir Bahud and his son are released from prison.

Tewangga asks Amir Alamur about the origin of the dagger. Amir Ismail turns as white as a sheet, but Amir Alamur merely states that he had inherited the dagger from his parents, that robbers had attacked him for the sake of it, but that God had preserved him. The names of the robbers he pretends not to know. The Zahid laughs, and Tewangga says that he knows everything and only has asked in order to fathom the mind of the first man he knows who would not divulge the wrong done to him by his fellow-creatures.

The messenger of the 4 viziers reaches Kerba Bahur and delivers the letter, wherein they propose to marry the son of the king of Sēmatrani to Sēri Maharaja Putēri, and Kiwabi to the princess of Sēmatrani. Kerba Bahur joyfully agrees and sends rich presents. In a letter he bids Tewangga bring the young couple to Kala Desa, but to beware of Bachtiar, who he had heard was in Siukam preparing a new attack on Tahta Yemen. He himself would come to assist them, as everybody joining Bachtiar is a traitor against himself. With Kiwabi the viziers may do what they consider best. The little army reaches Tahta Yemen safely and is sent back by Tewangga, who is afraid that Bachtiar might even attack Kala Desa.

Bachtiar in the meantime has urged his uncle to hurry up with the preparations for the expedition. Siwati visits with Bachtiar his teacher Tembun to inform him that Tewangga has turned apostate, and to ask him to put his course on Tewangga. Tembun refers them to his own teacher, the Braman Jakni, who for three hundred years has been living as an ascetic on the mountain Jaktun, has become the mightiest Brahman on earth, is clairvoyant and has all his wishes fulfilled by the Gods.

Bachtiar and Siwati climb the mountain Jaktun. Jakni is at his praying-palace, which is on the top of a huge column of fire. The two princes visit the top of the mountain, where the enormous fire is blazing, with thousands of pupils praying around it. Two days later a gigantic dragon appears, carrying in its mouth a fruit of the jungle which is the food of Jakni. Having taken the fruit, Jakni, climbs down on the body of the dragon from his praying place, and taking his customary seat on a rock, resumes the teaching of the worship of fire to his pupils. Seeing Bachtiar and Siwati, he knows at once the purpose of their coming, and tells them that they will not see their desire fulfilled. Bustamam, prince of Sēmatrani, will marry Bachtiar's bride and become ruler of Tahta Yemen. Through his misbehaviour and the murder of his brother and mother Bachtiar has forfeited the goodwill of the Lord of the World, and his inheritance will be given to Bustamam: Bachtiar should give

up all ill-will against Bustamam as being of no avail. Bachtiar and Siwati implore him to help them and not Tewangga, the accused apostate. Jakni replies that he is unable to grant their desire, but he can show Bachtiar a way to repent of his sins and thus obtain the forgiveness of the Lord. Bachtiar promises everything and is given a corner where he has to live for seven days as ascetic, worshipping the fire: as soon as he is given a sign, he should inform Jakni. Bachtiar obeys, living on the provisions he has brought with him, and on the eighth day pretends to have received a sign that all is disclosed to Jakni. The latter says that he also has received a sign, but of all omen, and proceeds to his own place of worship to make sure. By the will of God he asks by mistake his gods about the fate of Bustamam and not that of Bachtiar, and receives a favourable reply. Returning to Bachtiar, Jakni says that he is now able to help Bachtiar, whom three more days of ascetic life will make invulnerable. When Bachtiar has accomplished those three days, Jakni says that there is only one sword that will be able to kill Bachtiar; he "calls" that sword, which immediately appears before him and is thrown into the big fire. He promises to help Bachtiar if he cannot vanquish Tewangga, and likewise "calls" for the only sword that can kill Siwati, which he gives to the latter to take care of. They thank Jakni and return to Siukam, where the subject princes are already arriving with their armies. Bachtiar boasts of the assistance which Jakni has given and promised him, and Tesnahur is glad that the mighty Brahman is with them. When all the princes have arrived, a banquet is given in their honour, and all brag of the great feats they will do. Only the king of Gujerat remains silent. Tesnahur asks what he thinks of Tewangga's treason; the king of Gujerat asks whether Tesnahur has consulted his elder brother. Tesnahur says that he has not, as Kerba Bahur through old age and grief has become so inaccessible to reason that he is even angry with his only remaining and first-born son Bachtiar and has given orders to kill him. He repeats all the lies which Bachtiar has told him about his own innocence and the treason of Tewangga. The king of Gujerat is unable to believe such things and demands that Tewangga be called. Tesnahur refuses, but the king of Gujerat insists, if it is only to find out whether Tewangga will come or not. Faith is a private matter, which Tewangga has to settle with his own conscience. He and his brothers had come to ask Tesnahur to leave the work to them and stay at home unless they were unable to accomplish their task, but what he had heard now had blunted his passion (*nafsu*), and Tesnahur knows that without the right anger (*march*) a war comes to naught. Even if Tesnahur had broken off his relations with his elder brother, Kerba Bahur is still the heart, they themselves are the body and the limbs, and without Kerbabahur's consent they could not have the true fighting spirit. If however Tesnahur will order them to march, they will follow him unto death. The kings of Jezat and Jërtalis agree, and the king of Gujerat suggests that he and his two

brothers should proceed to Kerba Bahur and ask for his order to remove Tewangga. Tesnahur admits that they are right, but it will be useless, as Kerba Bahur dotes on Tewangga. In the interest of the dynasty he asks them to help him and Bachtiar. The kings reply that they will obey Tesnahur unto death. On Tesnahur's question the king of Gujerat explains that according to the belief they have inherited from their forefathers a war is like a lawsuit, the right gains the victory, and if they are vanquished, it is a proof that they have been in the wrong. Tesnahur can say nothing against this, but as he has decided to help Bachtiar, he orders that those of the kings who are with him might join their troops on the following day, as the next day he will depart himself. Much grieved that the three most powerful of his vassals have not offered to do the work for him (*berchakap*), he retires.

On the third day eight of the kings have departed with their armies; the king of Gujerat and his brothers have not moved, and some of the subject princes have not yet arrived. Tesnahur is furious, and Bachtiar suggests that he stays behind and destroys the countries of all those kings that are not with them, in order to leave no traitors behind. Tesnahur fears that such a policy will give him a bad reputation and decides that they will settle Tewangga first and later on those who have not joined them. The vassal-princes hear of that conversation, and much afraid all of them depart on the following morning together with Tesnahur. They pass Kala Desa, and Tesnahur, afraid that the capital may be attacked by another enemy or that Tewangga may fall back on it, orders the kings of Kêmusat and Sêtin, both his trusted friends, to surround the town with their armies and prevent anybody from leaving or entering it. Kerbabahur hears this and is greatly enraged; he fears for Tewangga, but being unable to do anything, has the gates closed and the walls guarded by his troops.

Tesnahun continues his march on Tahta Yemen, destroying and plundering villages. Tewangga is informed, and preparations against the attack are made. The Zahid returns to his village, which belongs to Siukam. He suspects that Bachtiar has invoked the help of Jakni, which will cause them much sorrow, but God will protect them.

Tewangga sends out spies, who mingle with the troops of Tesnahur and obtain information. He also sends a trusted messenger to Kerba Bahur; the messenger avoids the army of Tesnahur, but is captured by the troops of Gujarat and brought before the king and his brothers. He pretends to be a native of Kala Desa who has visited Tahta Yemen, and having heard of the blockade of Kala Desa, is hastening to rejoin his family. He reports that on the order of Kerba Bahur Tewangga is going to resist the attack and gives the kings a full account of what has happened in Tahta Yemen. Bustamam, who will lead the defence, is the same who has vanquished Bachtiar, and is not the least afraid of Jakni's promised assistance. Tewangga and Kiwabi have been converted to Islam. The kings,

rather uneasy, give him a letter to Kerba Bahur and another letter to pass the troops who surround Kala Desa. The officer enters the town safely and delivers his letters. Tewangga reports that Tesnahur is going to attack Tahta Yemen; if he yields, he defames his master, if he resists, he becomes a rebel against Tesnahur. They have decided to defend the town until their last breath, but are uneasy about Kala Desa of which they have heard that it is blockaded. They are however unable to relieve Kala Desa, as they cannot leave Tahta Yemen without Kerba Bahur's order. Kerba Bahur agrees with the decision of the viziers and bids them resist the attack, and to care not for him but for his good name.

The king of Gujerat reports that he and his brothers have been called up by Tesnahur and Bachtiar to capture Tewangga, who had rebelled against his master but that they had not been given time to consult Kerba Bahur, and suspecting something they ask for his commands. Kerba Bahur has a reply written that not Tewangga but Bachtiar is the rebel against God and himself, having murdered his brother and his mother. The messenger easily passes the surrounding troops when he leaves Kala Desa.

In Tahta Yemen Tewangga and Sĕjan Bada will defend the town outside the gates, Aplus and Taniasin to remain with the two kings. Bustamam and his friends will accompany Tewangga; Johar and Khamis select 1000 knights to be Bustamam's bodyguard. Bustamam takes leave of Sĕri Maharaja Putĕri and asks her for the ring he had given her; Sĕlamih also gives him the ring she has received from Dewi Nilawati. Bustamam joins Tewangga and sends Johar and Khamis as spies to Tesnahur's camp. Chĕkur is to accompany them and look for magic charms in the tent of Bachtiar, which Jakni may have given him. She finds some charms and returns with Johar and Khamis, who have mingled with Tesnahur's troops. Bustamam orders the charms to be buried in the jungle. Johar and Khamis report the army of Tesnahur so big that the forces of Tahta Yemen will easily be surrounded, and following their advice Tewangga decides to resist the attack under the walls of the town. Bachtiar, who leads Tesnahur's advance-guard, storms the empty camp and thinks that Tewangga has already fled. Pressing onwards, he meets with Tewangga's rearguard and fighting begins. Johar and Khamis with the 1,000 knights keep Bachtiar's troops back, and fighting lasts until the night comes. Bachtiar pitches his camp and the other princes arrive and reproach him for his rashness. He says that Tewangga had barred his way and started the fighting. Tesnahur holds a council of war. The kings of Siulan and Guha are of opinion that fighting having begun, no other way is open to them, but the king of Gujerat insists that a letter to be sent to Tewangga, as fighting is the last means they may resort to. Tesnahur sends a letter to Tewangga reminding him that Kerba Bahur has given him his high office and his confidence, which Tewangga may not abuse by turning rebel. Other officers were sure to follow his example. Tewangga should repent and

proceed to Kaladesa, delivering Tahta Yemen to Bachtiar. Otherwise they are compelled to take Tahta Yemen by force and hand it over to Bachtiar.

Bustamam in the meantime has divided his army into four troops, one for himself, one for each of the two viziers, and one for Johar. Through a magic potion and charms, he makes his men invulnerable. One of his rings he gives to Johar, the other to Khamis. Jumaat and Jêrangau are to watch over the viziers: Saptu on his mute appeal is allowed to participate in the fighting.

Tesnahun's letter arrives. Aplus and Taniasin come, and the four viziers draft a reply. Tewangga gives it to Johar to peruse, who also dictates a letter. Both versions are read: in their letter the viziers say that Tewangga has acted on instructions received from Kerba Bahur. Kerba Bahur had sent Sêjan Bada with instructions of which they enclose a copy. Tewangga acknowledges the order of Tesnahun, but requests to be given time to await Kerba Bahur's decision, for which he has already asked.—Johar's letter is practically the same: Tesnahun well knows that Tewangga has acted solely on Kerba Bahur's orders. He has never deviated from the custom of their ancestors, and if he is shown a single line from Kerba Bahur to that effect, he would surrender not only the town but also his life. Johar's letter is sent and causes consternation. The kings of Gujerat and Jezam explain that by alluding to the custom of their ancestors Tewangga claims that a king as such has no brother, son or grandson, and the letter further says that only his master can accuse Tewangga of being a traitor, that Tesnahun as brother of the king is of no importance, and that Tewangga may not surrender the town without Kerba Bahur's order. They admit that Tewangga is right, but Tesnahun should decide what they should do. Bachtiar says that he told them that it would be of no use to write to Tewangga, and they could do nothing else but cut off his head. The king of Gujerat objects that they would spoil their good name by attacking a servant appointed by his father. Bachtiar replies that those who are afraid could stand aside, but if he was wrong, his teacher Jakni would not have helped him. He takes down his waistband which Jakni had given him, throws it on the ground, and it turns into a gigantic snake. Some of the princes become afraid; Tesnahun says that they believe that Jakni will assist them, but Bachtiar should not act rashly and disturb their council by such things. Bachtiar excuses himself that Jakni has ordered him to act quickly, as otherwise their religion will be destroyed, and by tarrying they may incur Jakni's anger. The princes fear the mighty and strong-willed Brahman, with the exception of the king of Gujerat and his brothers, who worship idols and not the sun or fire. This king says that they had come not to trifle but to hear Tesnahun's orders: there were death and wounds in war also; and it would come to the same as if they were devoured by a snake. Tesnahun decides that they will assist Bachtiar. They were fighting not for Bachtiar, but for their faith. The kings of

Gujerat and Jēzam, being the eldest and most experienced, should take the command. Both reply that they will obey, but they cannot do so with all their heart.

On the following morning the king of Gujerat has the war-drum beaten; Tewangga does not answer but hoists a white flag with a red border, which signifies that he declares himself subject to him under whose authority he acts. The kings of Gujerat and Jezam are in great sorrow: for the second time the drum is beaten with the same result. Bachtiar, rejoicing, suggests that Tewangga is afraid and that they go to fetch his head after beating the drum for a third time. The king of Gujerat replies that he is in command and shall not obey Bachtiar's wishes. When the sun is in the zenith, the war-drum is repeated twice, and this is done again in the afternoon. Then, at the second beating Tewangga lowers his flag, and at the third time replies, keeping up beating his drums until late in the night. The kings of Gujerat and Jēzam are startled and conceive that they will gain nothing but trouble and sorrow from this war. They report to Tesnahur, but do not share Bachtiar's opinion that Tewangga is so afraid that he did not answer the drums until so late that he was sure nobody would attack him, and that he will flee during the night.

On the next morning Tewangga answers the drums, and the king of Gujerat arranges his army. The king of Guha takes the right wing, the king of Siulam the left, the king of Jezam the centre, and the king of Gujerat with his two brothers forms the head. Bustamam and the viziers know that the king of Gujerat, who has never lost a battle for Tesnahur, is in command, and that his order is to enclose and surround them. They agree that Khamis shall keep back one wing, the viziers the other, and Bustamam is to try to smash the head and the centre. Thus they arrange their troops, the knights in front of the soldiers, but with strict orders to restrict themselves to defence. The drums are beaten again, but Tewangga does not give the order to advance. The king of Gujerat feels uneasy, as he understands that Tewangga will do nothing but prevent him from carrying out his intentions, but he has to obey Tesnahur's order. So he sends his son Amir Bedla with four knights to challenge the enemy, but Tewangga forbids his warriors to fight unless they are attacked where they are, and the challenge remains unanswered. Bachtiar urges the king of Gujerat to storm, as Tewangga was sure to flee, and following closely they could enter the town. The king of Gujerat refuses: if Bachtiar will attack on his own account, he may do so. When night falls, both armies return to their camps. At a council of war, Tesnahur, urged by Bachtiar, asks the king of Gujerat to try a general attack, and the king of Gujerat agrees on condition that Bachtiar joins in it.

On the next morning Amir Bedla, Bachtiar and forty knights try to press back Tewangga's knights without using their arms, but to no purpose. Bachtiar draws his swords, and though unwounded, the knights fall back before his blows. Khamis jumps to the front,

calling Bachtiar a dead dog, cuts off the leg of a warrior of Gujerat mounted on a steer, snatches his sandal and throws it at Bachtiar. Dodging the strokes of Bachtiar's sword he picks up the sandal again and thrashes Bachtiar with it, who unable to hit Khamis, falls slowly back, trying to ward off the blows as well as he can. Bedla laughs and asks why Bachtiar allows himself to be thrashed with a sandal? Bachtiar replies that he cannot fight with such an unequal adversary, and asks Bedla to have that boy captured. Bedla sends some of his knights against Khamis, and fighting becomes more general. Tewangga's knights remain unharmed, but many of the warriors of Gujerat are wounded, and some slain. Bustamam wonders at their bravery. Just before the fighting ends, a warrior of Tewangga, whose sword has been broken, is lassoed and brought to the king of Gujerat, who takes him to Tesnahun. Tesnahun questions the prisoner and hears that Sējan Bada has been sent by Kerbabahur to help Tewangga to have Sēri Maharaja Putēri married and her husband crowned as king of Tahta Yemen. Bachtiar opines that to-day it has only been play, and unless they attack in earnest, the war will last a year. Tesnahun reminds him that Tewangga's troops are invulnerable; Bachtiar says that Jakni has given him charms for invulnerability too, and sends Siwati to fetch them from his tent. When Siwati reports that the charms have disappeared, Bachtiar opines that the boys have stolen them for their own men, but he will cut off their heads and impale on the battlefield those who now think themselves invulnerable. If the king of Gujerat will provide sufficient men with lassoes and maces, the matter will be quickly settled. The king of Gujerat replies that he will only fight in a fair manner, but if another would capture or kill the boys, he would undertake to vanquish Tewangga and the other viziers: if he does not succeed within a few days, they might thrash his face with a sandal as Bachtiar's had been thrashed to-day on the battlefield by one of the boys. The knight of Tewangga is set free, given presents, and sent back to his army.

On the following morning both armies march up in the same order of battle. Khamis advances, and those he vanquishes in the first fighting, and who fight fair, he sends back as "dead men" to their own princes. Soon he is fighting against superior forces, who try to surround him, and Busamam comes to his rescue. The king of Jezam, personally leading his troops, succeeds in encircling Bustamam and Khamis, in spite of his heavy losses, and the king of Gujerat, who is watching the two boys with growing sympathy, sends his son Amir Bedla, who is of Bustamam's age to capture them. The viziers see the dangerous position of Bustamam and Khamis, and fighting becomes general, the kings of Guha and Siulan also joining. Johar, followed by forty of the bravest knights, cuts his way through to Bustamam, who is just encountering Amir Bedla. The two boys like each other at sight, and Bustamam warns Bedla that fate may turn the tables against him, as his father is in

the wrong. After a short struggle Bedla is captured and bound. All his friends try to rescue him; the king of Gujerat fights against Khamis and Johar, the king of Jezam against Bustamam. The latter dodges the weapons of his adversary without attacking, and when called upon to show his arms, Bustamam replies that if he wanted to kill the kings he would not wait for their order. This is a foolish war, thoughtlessly plotted to the detriment of Kerba Bahur and their own good names, and any king who took part in it had better return and repent, as otherwise the dynasty in his kingdom might be changed. The king of Jēzam is in a great fury, but has to admit that Bustamam is right. He turns his elephant and seeks the king of Gujerat, who is rather surprised at seeing his friend, for the first time in his life, turning away from his foe, but he leaves Johar and Khamis to meet him. The king of Jēzam explains, praising Bustamam, and adds that the king of Gujerat need not trouble about his son, who would come to no harm in the hands of Bustamam and the viziers. The king of Gujerat agrees with him.

Bedla is safely carried to Tewangga, who unbinds him at once, has him bathed and clothed in royal garments, leads him to the royal armchair and with Sējan Bada and Jumaat takes his seat below him.

The kings of Gujerat and Jēzam give the signal to break off the fight, to the surprise of Tewangga, who promptly does the same, and that of Tesnahur, who is taken aback when he hears of the capture of Bedla and the heavy losses.

Bustamam returns to his camp, greets the viziers and sits down next to Bedla, takes his hand and asks him not to mourn his fate, as victory and defeat are the lot of the warrior, and in war one should have God on his side. He proves this by quotations from old epics. He shares his meal with Bedla and orders the captured knights of Gujerat to be set free and to pay respects to their master. When Bedla asks to be allowed to visit his father in order to compose his fears about his fate, and to implore him to withdraw from this war, promising to return speedily, Bustamam and the viziers agree; the knights of Gujerat shall go with him, and an officer and ten men of their own. They leave it to Bedla whether he will return or not: their own men may return without him. Bedla reaches the tent of his father, who has just gone to Tesnahur. He waits for him, detaining Tewangga's officer, with whom he wants to return.

The messenger from Kala Desa arrives; with great joy Tewangga reads Kerba Bahur's letter and sends the messenger with the letter for the king of Gujerat to the latter's camp. Bedla takes the letter to Tesnahur's tent. The king of Gujerat, who had already requested Tesnahur to relieve him and his brothers from participating in this war, declares that his master now orders him to withdraw. He gives the letter to Tesnahur, who has it read before the other

kings. The king of Gujerat declares that Kerba Bahur not having ordered him to help Tewangga, he will withdraw to Kala Desa to await Kerba Bahur's further orders.

Bachtiar furiously exclaims that the old man in his madness is only obeying Tewangga; he will abolish the accursed, mad dotard. All grasp their arms, and the king of Gujerat reprimands Bachtiar; they will have to cut off his lips, and would rather perish in a fight with him than hear such words again. They neither fear nor respect Bachtiar as being the son of a king; for them there is only one master. Bachtiar is frightened and remains silent; the council of war is broken off.

Tesnahun does not know how to act. Boasting of his and Siwati's invulnerability and the assistance of Jakni, Bachtiar implores him not to give up the matter, and Tesnahun, knowing that he has gone too far to withdraw without losing his good name, and anxious to please the mighty Brahman, decides to try and find another king to take command.

The kings of Gujerat and Jëzam receive accounts of what has happened from Bedla and Tewangga's officer, and as Bedla chooses to return to Tewangga, his father decides to return to Gujerat and then proceed to Kala Desa; Bedla shall procure him a letter to Kerba Bahur that he may be admitted.

Bedla returns to Tewangga's camp, and the viziers, overjoyed, send the letter he had asked for to the king of Gujerat, who departs at once with his brothers and the king of Jëzam and their armies. They reach Kerba Bahur, ask his pardon and report. Kerba Bahur is alarmed at the news that Jakni stands behind Bachtiar, and though the kings try to calm his fears, praising Bustamam and the viziers, he bids them prepare their armies to assist Tewangga.

Tesnahun holds a council of war. Bachtiar boasts again of his and Siwati's invulnerability, which they prove with each other's swords. Tesnahun orders the kings of Kamis and Guha to take supreme command.

The viziers recognize the red and blue standards of the kings of Kamis and Guha and warn Bustamam that they and their warriors carry a narcotic in their clothes, which in a fight gets into the mouths of their foes and makes them faint. The fairies Chëkur and Jerangau fetch certain roots from a near hill, which, when eaten, form an antidote against the narcotic, and Bustamam distributes them amongst his knights and his friends.

On the following morning, when Tewangga has answered the war-drums, the king of Guha arranges his armies in four big troops who are to encircle the enemy. He himself with his brother takes position far in front of his troops.

Bustamam, Johar and Khamis their knights are drawn into the battle and the enemies close round them in a wide circle. The viziers advance to break this circle, which is always reinforced from behind. Johar forms a barrier behind the kings, cutting off further reinforcements and attacking the kings from the rear. He breaks

the troops immediately behind the kings, and they turn to meet him. Johar cuts off the trunk of the king of Guha's elephant, and the animal breaks through the circle round Khamis. The king of Guha jumps down, mounts a horse and attacks Khamis, who cuts off the horse's feet. The king of Guha advances towards Khamis on foot: the king of Kamis hastens to assist his brother, but Bustamam and Johar have joined, the viziers have advanced, and the order of battle is broken. The kings are swallowed up in the general fight, which lasts until it grows dark. The kings see that their order of battle is of no avail and decide to try a general attack on the following day.

On the following morning Tewangga does not answer the war drum; Bachtiar thinks he is afraid and urges to storm the town, but the kings of Guha and Kamis prefer to wait, and Tesnahur agrees.

Tewangga has held a council of war with the other three viziers, and a letter is sent to Tesnahur repeating, that Bachtiar is the cause of all trouble and that Tewangga is acting in accordance with Kerba Bahur's orders, and requesting Tesnahur to consider, what custom bids him do in order to preserve his good name.

This letter is handed to Tesnahur in the council of war. Bachtiar observes that his uncle wavers, and tearing the letter to pieces admits that it is written very cunningly, but Tewangga has rebelled first against him, and now against Tesnahur, who stands in Kerba Bahur's place. To Tesnahur's objection that Tewangga could not do otherwise but obey his master Kerbabahur, and that they should see the latter first and depose him if he should refuse to order Tewangga to surrender the town, Bachtiar replies that the old madman could not escape, and that they better finish the work on the spot first. Tesnahur consents, but does not agree to Bachtiar's suggestion to impale the messenger as only answer to Tewangga, and sends Tewangga a message to hand over the town to Bachtiar and to go to Kerba Bahur with him, Tesnahur, who would accept Kerba Bahur's judgment. Thus Tewangga would not commit any offence.

When Tewangga hears the message, he says that Tesnahur apparently is convinced that he is in the right, and still has to learn what is right and what is wrong. Aplus and Taniasin return to the town and report to their masters.

Whilst Tesnahur and his princes would rather have awaited to see whether Tewangga would send a reply, Bachtiar urges that fighting should be renewed at once, and Tewangga answering the war-drum, the armies march to the battlefield.

In the first skirmish a moustached warrior of Kamis is captured, who has breasts like a pregnant woman. This curiosity, who calls himself Janpa, is brought to Tewangga, who sends him back to the king of Kamis to inform him that he has received Tesnahur's message and will obey, and that he has so informed Sēri Maharaja Putēri, and if she will not consent, would take her to Kerbabahur.

She had been adopted by Kerba Bahur and had been made his (Tewangga's) queen, whose orders he might not disobey. Without giving Tewangga time to receive her reply, Tesnahur had renewed hostilities, Tewangga would therefore fight, as he could not accept orders from Tesnahur, who is only following Bachtiar, a traitor to Kerba Bahur. Bustamam is greatly pleased with this message and gives the order that everybody is to be cut down who advances and will not withdraw.

Whilst Jampa is delivering Tewangga's message to his king, Bustamam, Johar and Khamis join in checking the advance of the enemy. Four princes of Guha and Kamis are slain, five are captured, and the troops of Guha and Kamis begin to break. The kings urge Bachtiar to help. Through his terrible strength he presses Tewangga's troops back on the right wing, but Khamis attacks him again with the sandal of a dead soldier and gives him a sound thrashing. His face swollen and covered with blood, the little finger of his right hand broken so that he has to drop his sword, Bachtiar has to flee, pursued by Khamis. The king of Guha seeks in vain to interfere, Khamis dodges his mace, and the king gives the signal to cease fighting and return. Khamis pursues Bachtiar to his tent; the king of Guha orders his men to capture him, Khamis throws away the sandal, takes his sword and cuts his way back to Bustamam and Johar.

Tewangga receives the captured princes with great honour, has them bathed and clothed and sends them back to their kings, accompanied by the captured knights, with the message that the kings should take care not to suffer the same fate, as he does not want kings of their rank to lose their good names. The prisoners do not like to go back to Tesnahur, but Tewangga consoles them that theirs has been the common fate of every warrior, and that they may return to him if they like after having delivered their message. This they do and report that the kings of Guha and Kamis now understand what has caused the king of Gujerat and his brothers to withdraw from the war.

The kings, taking Janpa with them, go to Tesnahur and make Janpa repeat Tewangga's message. Tesnahur regrets what he has done and blames Bachtiar. The king of Guha relates how Bachtiar has been thrashed with a sandal and declares that he will withdraw from the war. Bachtiar abuses the kings. He had run away before the sandal because Jakni had taught him not to fight against a foe who used no arms, and if the kings had used such language to him outside the council, he would have knocked out their teeth. Tesnahur asks him not to start a quarrel, as he will be able to find other princes on whom they can rely. The kings of Guha and Kamis angrily leave the council and depart with their armies.

Tesnahur discusses the position with Bachtiar, who would call Jakni. Tesnahur asks Siwati whether he thinks Jakni will come; Siwati is uncertain, but thinks it possible if Bachtiar, whom Jakni seems to like, goes to fetch him. Tesnahur calls a council of

war, but has to offer the tributes of Gujerat, Jēzam, Guha and Kamis before the king of Siulan undertakes to capture or kill Bustamam and his friends and take the supreme command.

Bustamam and the viziers are glad over the good news they hear from the princes who return to Tewangga. Tewangga warns Bustamam that the king of Siulan and his warriors are very skilful in using the lasso.

On the next morning Tewangga answers the war-drum of Siulan. In the first skirmish Khamis is lassoed and rescued by Bustamam, but so numbed that he has to be carried behind the lines. As soon as he feels well, he returns to Bustamam, and together they play havoc amongst the warriors of Siulan. The king of Siulan enters the battle, seated on his elephant, fighting with arrows and discus. He meets Khamis, who cuts the king's lasso, but steps into the noose which the king's mahout keeps trailing on the ground, falls and is made defenceless by further lassoes.

Jumaat sees Khamis' plight and informs Johar. Both try to cut their way through the troops that surround their king. Bustamam sees their efforts, suspects the reason and tries from his side to reach Khamis. They are however unable to force their way through the masses, until Johar with his men cuts off the reinforcements. Tewangga and Sējan Bada advance, Saptu keeping at Tewangga's side. The king of Siulan recognizes Tewangga and throws his discus at him. With a sudden jerk Saptu turns Tewangga's horse; the vizier nearly falls and angrily reproves Saptu, when the discus, consecrated by the blessings of many Brahmans, cuts right through the head of his horse. Tewangga falls, but jumps up again and on foot continues to cut his way through the enemies. The king of Siulan has observed the scene and throws another discus at Sējan Bada, whose life Saptu saves in the same manner. Furious fighting concentrates round the king of Siulan, whose elephant becomes restless. The warriors of Siulan now have to fight against two fronts, and Johar, relieved through the attack of Tewangga, reaches the king's elephant and frees Khamis. The king of Siulan gives the sign to cease fighting, but Bustamam, Johar and Khamis take no heed, as fresh forces of Siulan, seeing their king still on the battlefield, continue to arrive. Bustamam rages like a madman. Only when he sees that Khamis is rescued, his fury abates; he meets Tewangga and Sējan Bada and requests them to return. The king of Siulan turns his elephant. Bustamam, seeing that Khamis is still in a great fury, cuts off the elephant's trunk and tusk; the animal totters, and Saptu jumps on its back and captures the mahout. Bustamam cleaves the elephant's head, and the animal falls down, throwing the king. The king jumps up, sword in hand. Khamis asks Bustamam to leave the king to him, and Johar and Bustamam attend to the warriors of Siulan who rush to assist their king. Khamis, calling the king of Siulan a thief and sneak who deserves no crown, knocks off his crown, which is picked up by Jumaat. The king turns to him, and

Jumaat knocks him down with a mace. Khamis jumps on the king's back and binds him securely with the lassoes that are lying around. Bustamam and Johar keeping off the princes of Siulan, the king is carried to Tewangga and Sĕjan Bada, who rather embarrassed receive him respectfully. The king replies that these are the doings of accursed boys; otherwise both Tewangga and Sĕjan Bada would have already had their heads cut off by his discus. They should not unbind but kill him. The viziers reply that his fate rests with their master, Bustamam. Saptu, angry at the word accursed, remarks that though accursed they still have brains and are not like the king, who had a crown but no brains to remember who had given him that crown. It is not their custom to kill the "corpses on the battlefield", and the king should remember the fate of the traitor, who, unworthy of a weapon, had been thrashed with a sandal. The king, ashamed, remains silent; the viziers, who have now learned that Saptu has saved their lives, have a carpet brought out for the king and respectfully take their seats opposite him. Being still bound, the king of Siulan finds the situation rather curious.

Khamis continues to rage amongst the fleeing troops of Siulan and pursues them even into the camp of Tesnahur. Bachtiar flees to the rear, excusing himself later that he had intended to call up the other armies.

Darkness grows. Tewangga's drums call more urgently, and Bustamam and Johar succeed at last in persuading Khamis to return with them to the viziers.

At the order of Bustamam, Tewangga unbinds the king of Siulan, bathes and clothes him and takes him to his own tent. Jumaat puts his crown at his feet, but the king refuses to put it on in spite of Sĕjan Bada's consolations. When the meal is served, he will not suffer Johar to pour water over his hands. Bustamam thereupon takes the water and pours it over the king's hands, and they share their meal together. Tewangga sets free all prisoners from Siulan, who pay their respects to their king, pleased with the honour that is shown to him. Tewangga sends for the vizier of Siulan, who is still waiting on the battlefield, tells him to collect the vassal-princes and the troops of Siulan and to pitch the royal tent for his master, who would soon return to his country. The king's mahout is also set free, is severely reprimanded that his sneaking, thieving action has caused Khamis to insult his king, but is allowed to remain with his master. On the following morning the king of Siulan is sent with a retinue of his vassal-princes into the town, where Aplus and Tantiasin have prepared everything to receive him with due honour. In the hall of audience the kings of Sĕmatrani and Bĕdĕrani welcome him. Tantiasin, on his knees before the throne, informs Sĕri Maharaja Putĕri that her father, the king of Siulan, has come to ask forgiveness for having acted without consideration, being deceived by Bachtiar. Sĕri Maharaja Putĕri replies that such things happen every day in the way of

the world, but the king should beware of a greater deception, the harm of which would never cease. The king of Siulan replies that he has learned his lesson and asks again her pardon. Sèri Maharaja Putèri cannot help smiling at his failure to grasp the meaning of her words. She presents him with royal clothes, a new crown and a palace of his own. Soon he becomes converted to Islam and refuses to return to his country until the war is ended.

Bachtiar decides to invoke the assistance of Jakni. He leaves with only three knights: it is given out that he has gone to fetch fresh troops. The king of Tēm̄is is made commander-in-chief.

After two days' rest the king of Temis starts the battle again, and Khamis, fearing that they would have to fight for another ten years, orders a general attack after the first skirmish. The king of Temis faces him, in the fight exposes his armpit, which Khamis touches with the sheath of his sword, and following Khamis' advice decides to cease fighting on the side of the rebels. The king returns to Tesnahur and asks him to give the supreme command to another prince, as he himself is now no more but a "corpse on the battlefield." As soon as Tesnahur has given the sign to cease fighting, the king of Tēm̄is marches with his troops to Tewangga, is brought into the town, converted to Islam, and remains at Tahta Yemen.

Tesnahur gives the command to the king of Basmit, who suffers heavy losses in the first battles. Bustamam and the viziers suspect that Bachtiar is gone in search of reinforcements, and that therefore the war is carried on in a dilatory way. Bustamam decides to rest for some days. Johar and Khamis meanwhile may just keep back the enemy. They receive the rings which Bustamam had given to the viziers. Fighting is desultory.

Bachtiar complains to Jakni of his bad luck, imploring his help in upholding their faith, adding that the boys, who had stolen the charms Jakni had given him, had challenged him to bring his teacher to the battlefield to have his face slapped with a sandal. Jakni has pity on Bachtiar, and when he discovers through his geomantic books that Bustamam will destroy their religion, promises to send within five days his dragon to devour Bustamam. As Bachtiar asks for immediate assistance, Jakni sends three of his pupils, the Brahmans Jaksun, Jakli and Jakman, with three thousand novices, and also gives him an antidote against the venom of the dragon. Bachtiar arrives with the Brahmans on the battlefield on the day when Bustamam has just returned and is pressing the king of Basmit very hardly. The novices join in the fighting, and under their blows, delivered with stones and logs, Tewangga's troops fall back. Khamis, Johar and Bustamam come to their rescue, and many novices are slain. The Brahmans take a handful of dust, mutter a charm over it, throw it into the air, and an army of wasps and hornets attacks Tewangga's troops. Johar bids Bustamam, who is immune against the insects, to make an end to this heathen magic by destroying him who has caused it. Bustamam cuts his way through to the three Brahmans: Jakman attacks him with a

log, Bustamam snatches it from him and knocks him twice over the head, so that Jaksun has to bring him to Bachtiar's tent. Jaksun attacks Bustamam, who cannot wound him with his sword, but when Jaksun takes off his girdle-cloth, Bustamam wounds him on the hand with his dagger, which causes such pain that Jaksun runs away. Jakli advances; the girdle-cloth of Jaksun has turned into a big snake, which Bustamam hurls into Jakli's face. The Brahman grasps its head, and it turns into a root, which Jakli throws at Bustamam. It misses him, and falling on the ground turns into a big dog, which Bustamam kills with a mace. The blood and brains of the dog turn into scorpions and centipedes, which cover the ground and attack Bustamam.

By the blows on Jakman's head his magic power has been broken; hornets and wasps disappear, and fighting is renewed. Johar asks Bustamam to rather fight the Brahmans than scorpions and centipedes, and Bustamam rushes towards Jakli, dagger in hand. At the sight of the red-hot blade Jakli makes a hole into the ground with his heel and disappears into it. Bustamam thinking he has run away, attacks with his sword the novices until the drums beat to return.

Jakli reappears, goes to Bachtiar's tent and cures Jakman of his headache, but is unable to help Jaksun, as the poison has already entered the body. At his request Jaksun is carried back to Jakni with the message that Jakni should come himself, as the dragon would probably not be of much avail and only Jakni would be able to resist Bustamam's dagger.

The next day the Brahmans again throw dust into the air, which closes the eyes of Tewangga's warriors. but Bustamam, Johar and Khamis, protected by talismans and rings, keep the enemy back. Khamis fights with Jakli, but cannot wound him with his sword, and the drums to return sound before he can reach the Brahman with a mace. The emerald-rings, which Bustamam had given to Johar and Khamis, prove a cure for the sore eyes, and all are healed, but they can only trust to God to protect them against the magic powers of the Brahmans.

The next day Khamis fights with Jakman, who throws his girdle-cloth at him, but he is unable to kill the snake into which the cloth turns. Bustamam renders it harmless with a broken rice-corn he finds on the ground, and Jakman throws a root into the air which falls down as a big sheet of fire. Khamis has to fall back, but Bustamam remains unharmed and knocks down Jakman. Jakli, seeing that his missiles will not hit Bustamam, carries Jakman back, and the fire dies out. General fighting continues until dark.

Jakli and Jakman arrange that on the following day Jakman shall engage Bustamam, and Jakli, proceeding under the ground, will pull Bustamam down and suffocate him. When fighting begins, Jakman attacks Khamis first, and Jakli disappears into the ground. Johar has seen that and warns Bustamam, who thrusts his dagger

into the ground where Jakli has disappeared, and attacks Jakman. When the latter sees the dagger, he turns away, and Bustamam pursues him in vain.

The water issuing from the thrust of Bustamam's dagger flows into the hole where Jakli has disappeared and drowns him. Jakman has heard Jakli calling to Jakni, and awaits Bustamam, who has sheathed his dagger. They fight with logs and mace. Jakman is unable to hit Bustamam, who knocks him down with a mace and kills many of the novices who rush to assist their master until his mace breaks. One of the novices grasps his belt; Bustamam seizes his hands and swings him round, beating back with him the other novices. Jakman just rising, he knocks the body over his head so that blood and dirt fly around. Jakman falls on his face and Bustamam would give him another blow, but is afraid to defile himself. He hurls the corpse amongst the novices and tells Khamis, who wants to bind the Brahman, not touch the unclean kafir. The king of Basmit, who has seen the Brahman fall, orders a general attack, and the novices rescue Jakman, who is powerless as by contact with the unclean all the Jins and Shaitans who guarded him have fled. Night comes and fighting ceases.

Jakman is brought to Bachtiar's tent, is bathed, recovers and cleans himself with incense, but is unable to rise when Tesnahur visits him. A search for Jakli is made: following Jakman's directions the hole wherein he has disappeared is found full of water, and the dead body of Jakli is discovered. Jakman has it placed in a coffin and accompanies it to Jakni, as he alone is now useless. Tesnahur is very downhearted, but Bachtiar consoles him that Jakni is sending his dragon and will no doubt come himself when he hears that one of his favourite pupils has been killed and the two others are disabled.

On the following day there is no fighting; a river has appeared flowing from Bachtiar's tent right across the battlefield. Tewangga and his troops fear new magic but Johar explains that the enemy has followed the traces of Jakli, digging until his body was found, and thus made the river.

Three days later Tesnahur orders Bachtiar to command the troops. His attack is irresistible; Khamis commences the old play with the sandal, but Jumaat thinks that they should make an end of the man who has caused all the trouble. In vain they fight him; Jumaat calls Bustamam, but he, too, is unable to wound Bachtiar. He cuts down his horse, Bachtiar falls and Bustamam stabs him with his dagger. Though the blade does not penetrate the skin, it causes such pain that Bachtiar flees behind his troops.

Jakni has found out by his magic art that two of his pupils have have been killed (Jaksun apparently has died on the way), and that one is disabled. He finds out also that Bustamam's dagger is the cause of it, but "calls" in vain for this weapon, the first that has refused to obey his command. He orders his dragon to destroy his enemies and to bring him Bustamam and his friends.

The seven-horned dragon, fed expressly by the pupils with poisonous roots, departs roaring. He meets Jakman on the way; the carriers flee, and the Brahman hides between the buttresses of a big tree.

The dragon arrives in the middle of the big battle; with a tremendous roar he spurts his venom, and all those who are hit by it roll insensible on the ground. Johar, Khamis and Jumaat withdraw, leaving Bustamam, whom they know to be immune against every poison, on the battle field.

In Tesnahur's camp Siwati is fastening the sword, which can kill him, and which a little page-girl carries on her back, more securely. He has just laid the sword on the back of the girl, when an immense shout is heard that the dragon has come and all warriors are lying insensible on the battlefield. Everybody flees, the girl jumps up, Siwati seizes her tresses, and she falls backwards upon him. When she struggles to rise the sword cuts Siwati's side, his bowels gush out, and he dies.

Bachtiar calms Tesnahur's fears by curing some of his men with the antidote Jakni had given him, and Tesnahur is becoming more hopeful, when the news of Siwati's death is brought to him. He hastens to the spot and faints by the side of his dead son. When he recovers, he loudly repents of having started this enterprise. Bachtiar, afraid that Tesnahur might leave him, promises to take Siwati to Jakni, who is sure to revive him. Tesnahur is somewhat consoled, and Siwati's body, after the bowels have been put back, is stitched up and laid in a coffin. Tesnahur requests Bachtiar to hurry to Jakni, as the revival of Siwati will greatly encourage the princes who are still with them. Bachtiar replies that the war is nearly over: in a day or two they will enter the town, and a few days later he will be on his way to Jakni.

The viziers, and the two old kings on the walls of the town, gaze terrified on the battlefield, with the millions lying insensible on the ground, and Bustamam alone facing the big dragon. The dragon is afraid of the dagger and overwhelms Bustamam with poison. The boy nearly faints, and the dragon swallows him up to the waist. He bites on the dagger which Bustamam still holds in his hand, the blade penetrates deep into his lip and sticks there, and its poison robs the dragon of nearly all his strength. He is unable to swallow Bustamam any further and crawls away. Johar, Khamis and Jumaat hasten to the rescue, and clinging to the dragon start chopping off his tail, but in his pain the dragon heeds them not and carries them off. Great is the consternation of the viziers, of Saptu and the old kings. They hear of Siwati's death, but have the mortification of seeing their enemies carried from the battlefield and restored to life, while their own men do not recover.

When the dragon arrives at the foot of Jakni's hill, Johar, Khamis and Jumaat, who are still hacking at him, reach at last his vitals. Opening his mouth the dragon dies. Bustamam, still insensible, rolls into a cave and lies there hidden. Johar looks for him, but finds only the dagger, which he wraps up in some leaves

Khamis cuts up the animal's belly, but in vain, and they think that the dragon has dropped Bustamam on the way without their having noticed it. In deep grief they remain where they are for the night, and as it is very cold, light a fire.

Chëkur and Jërangau in great anxiety fly to Maharaja Thëlahud. He reproaches them for having left their post without order and bids them return. To Dewi Ni'awati, who calls him heartless, he explains that God has played with Bustamam, but has also hastened the end of the fight, which without the pain Bustamam had suffered in the mouth of the dragon would have lasted another ten years, as millions are still adhering to the wrong faith, with many pious ascetics among them, of whom Jakni is the most powerful. If Bustamam kills Jakni, none will dare to oppose him further. Only in order to bring things to a speedy end, and that the lives of innumerable human beings may be spared, the dragon had been able to carry Bustamam off, and his poison had been effective. Sëmbakas was now with Bustamam, and there is no need to be afraid. Chëkur and Jërangau return.

Johar had held his hand with Bustamam's ring over a fire, where-in some Agila-wood had been burning. The heat and the smoke had attracted Sëmbakas who finds the boys and with his magic art discovers the spot where Bustamam is lying. With water flowing over a talisman which Sëmbakas has brought with him, Bustamam is restored to life. Sëmbakas fetches fruits for them from Jakni's garden and encourages Bustamam to slay Jakni, whose time apparently has come, as he has lost the sense to discern between right and wrong. Bustamam should take great care, as no weapon in the world can kill Jakni: God may give him a weapon to slay the Brahman. Sëmbakas gives them a talisman which will restore to life the troops still lying insensible on the battlefield, and consents to carry back Jumaat to Tahta Yemen to help the viziers, as Johar and Khamis will not leave Bustamam. Bustamam gives Jumaat some fruits for his parents and Sëri Maharaja Putëri, to which Johar adds a pomegranate for Rakna Mala. Sëmbakas carries Jumaat to Tahta Yemen and leaves him outside the camp, which Jumaat alarms by rushing into the tent of the viziers and embracing his friend Saptu. He is quite exhausted, but gives the viziers the talisman and tells them what to do. At first they do not believe him, as Jakni's mountain is distant six days' journey on horse-back, but he convinces them, and the talisman does its work. Those who revive think that they are still in the midst of the battle, snatch up their arms and start fighting, but the viziers soon stop that. Jumaat is sent into the town and has to repeat his report to Sëri Maharaja Putëri, Siti Sëlamih and the kings.

Bustamam climbs up to Jakni's place of worship. An immense fire is burning in a terraced pit, fed by the pupils with wood thrown down from a high scaffold surrounding the pit. At the foot of the scaffold Bustamam thrusts his dagger into the ground; the water gushing forth turns into steam and advances a few steps

every day, until on the fourth day it reaches the fire-place and extinguishes the fire. Jakni, who was sitting on the top of the flame, drops into the pit. Seeing the fire extinguished and the pit full of water, he blames his pupils for not having brought sufficient fuel, and calls his dragon. The animal not coming, he suspects that Bustamam has killed it and extinguished the fire. In a great fury he bids pupils search for and capture the boys, to be impaled on the top of the mountain as a sacrifice on the lighting of the new fire. Bustamam and his friends are soon discovered and fight with the pupils, killing many of them, but as missiles are thrown at them from every rock and tree, they fall back until they reach an open space, where none of the pupils dare to follow. Some Brahmans approach them telling them that the ground is sacred and offering to conduct them to Jakni, if they will lay down their arms. Johar refuses, as they are still in the war and have only come to ask Jakni for an antidote against the dragon's poison, such as Jakni has given to Bachtiar. The Brahmans consent to take one of them fully armed to Jakni, and Bustamam goes with them. Jakni asks them why they have brought only one of the boys, and bids them fetch the others. The pupils rush at Bustamam, who slays many of them, Jakni, breathing fire and smoke, hurls him back. Bustamam advances again, but neither his sword nor his dagger can hurt Jakni, and another cloud of smoke and fire hurls Bustamam back to the foot of the mountain. He recovers and joins Johar and Khamis in their fight against the pupils. Many are slain, and Jakni comes to their rescue. Seizing Bustamam with his right, Johar and Khamis with his left hand, Jakni hurls them into the air, and they fall down a quarter of a day's journey from the foot of the mountain. In vain Bustamam has tried to wound Jakni with his dagger; the skin of the Brahman is as hard as stone. Jakni thinks that the boys are dead and orders his pupils to fetch Gaharu—, Palembang—and Kasturi-wood for the new fire.

The dew of the night makes Bustamam recover, and on the next morning he returns to the mountain, searches in vain for Johar and Khamis, and like a madman slays every pupil he finds searching for wood. Johar and Khamis, who have fallen down together, likewise recover and returning to the mountain search for Bustamam.

Bustamam is seen slaying one of the pupils by a Brahman. Bustamam discovers him but spares his life, and the Brahman tells him that his teacher, the Brahman Jaklas living on the mountain Mahaguna, has found out that Jakni will die to-day, and has sent him to fetch Jakni's heart, which through his long ascetic life has turned into a bezoar-stone. As no weapon can wound Jakni, his teacher has given him a rice-spoon (*sudip*), which will cleave Jakni's breast. He gives it to Bustamam, who finds it of a shining, black colour. He tells the Brahman, whose name is Jamita, that Jakni is still alive; Jamita should search for his two friends, return with them to this very place and wait there for him.

Bustamam climbs the mountain again. When he approaches Jakni, the Brahman has a foreboding of ill, though he has not yet

seen the rice-spoon, and offers to adopt Bustamam as his son. Bustamam consents if Jakni will follow his faith, renouncing the worship of the sun and the fire. This brings Jakni into a rage again, which increases when neither his pupils nor he can hit Bustamam with their missiles. At last Bustamam says that Jakni's time has come, and shows him the rice-spoon. Jakni trembles and tries to run away, but with three blows Bustamam cuts three of Jakni's ribs, his mouth and his groin. Jakni falls but heals his wounds with a talisman. Bustamam cuts off one of Jakni's hands, putting the talisman into his girdle, but Jakni has a second talisman ready. For a long time they fight in vain, Jakni renewing his promises and Bustamam his demand, until Bustamam succeeds in cutting off Jakni's head. It tries to join the body: Bustamam kicks it away, and before it has time to come again, Bustamam cleaves Jakni's breast, the inside of which is like black coral-stone, whilst the heart is like a jewel. Bustamam cuts the heart out, wraps it up in leaves and puts it into his girdle. The head remains where it is, but Jins and Shaitans in the form of dogs, jackals, cats, tigers, snakes, hornets and wasps issue from Jakni's body and rush upon Bustamam. The amulet which the Khatib al Aalam had given to Siti Sĕlamih, and which Bustamam wears, protects him, and the unclean spirits flee. Jakni is dead, his pupils take to flight, and Bustamam examines at leisure the place of worship, which is arranged like a garden, with flowers, richly carved fire-altars and dragons spouting water. He examines the fire-place, adorned with male and female idols, and in the pit finds masses of gold and silver, the sacrifices thrown into the fire by pious pilgrims. He also finds a beautiful sword. Returning to Jakni's body, he finds a Brahman searching for Jakni's heart. He throws himself at Bustamam's feet, and Bustamam spares his life. Jakwan, as the Brahman is called, has been the favourite pupil of Jakni and had been bidden by him to take after Jakni's death his heart, which would bring him long life, fulfilment of all his wishes and power over all animals. Bustamam promises him better things if he will follow him, and the Brahman consents, as he has already had a sign that he will gain salvation. With his 700 pupils he follows Bustamam to the foot of the mountain, where Johar and Khamis are waiting for him with Jamita. He shows them the sword, which Khamis recognizes as the one which Bustamam had given him, and which had mysteriously vanished. Afraid that Bustamam would be angry, he had said nothing of it and had taken the sword of a knight killed in the fighting. Bustamam examines the sword and recognizes it also. Johar says that his sword, too, had disappeared, and Jakwan explains how the sword of Khamis has come into the fire-place, and that of Johar had been given to Siwati. Bustamam bids Jamita to tell his teacher that what he desired was now in his possession, and if his teacher would come to Tahta Yemen, Bustamam would give it to him, and something better, too. If he would not come, Bustamam would visit him on Mount Mahaguna. After Johar, Khamis and Jamita have seen Jakni's place of worship, they depart for Tahta Yemen. On

the way they find Jakman bringing the body of Jakni and having heard from Jakwan what has happened, he follows Bustamam.

Since Bustamam had disappeared, Bachtiar had urged Tesnahur to storm the town, but in his grief over the death of Siwati Tesnahur has refused, until Bachtiar threatens to look for help elsewhere. Tesnahur, afraid that Bachtiar will not keep his promise to take Siwati's body to Jakni, calls a council of war, and it is decided to call in the kings of Kēmusat and Sētin, who are still blockading Kaladesa, and leave only a small guard there, as nothing can happen to the town as long as they stand between it and Tahta Yemen.

Bachtiar takes the lead with 1000 knights, whom he has made invulnerable; the rest of the army is divided into five troops. In the first skirmishes Tewangga's men are pressed back, Tewangga himself advances, and Bachtiar hastens to meet him. Jumaat and Saptu, each armed with a sandal, face him; Saptu throws a handful of dust into Bachtiar's eyes, and Jumaat thrashes him with the sandal. Blinded, Bachtiar slashes out with his sword. Jumaat wounds Bachtiar's horse, which runs back to the tents, carrying its master through his own troops, cutting down blindly his own men, and tearing to pieces a page whom Tesnahur had sent to call him and who had seized the bridle of his horse. At last the shouts of his people tell him that he is in his own camp, and he is brought to his tent and has his eyes washed, swearing at the accursed boys. Tesnahur gives the signal to stop fighting.

In spite of Bachtiar having been driven from the battlefield, Tewangga has lost on that day 400 knights and 20,000 men, and decides with Sējan Bada to move into the town, where defence is easier. During the night they enter the town, the gates are closed, the moat filled, and everything is prepared for the defence. The viziers report to the kings, praising Jumaat and Saptu, who have prevented a heavier defeat, but all are rather downhearted.

Bachtiar continues the attack and has the town surrounded. The moat prevents Bachtiar's troops from reaching the walls, but during one night Bachtiar, using every available man, has the moat filled up, and when dawn comes, the viziers see their enemies under the walls, and the whole plain filled with reserve forces. With a shower of missiles the defenders try to keep the foe back, and stones, earth, boiling water and oil and molten tin are poured on those who try to tear down the walls. Under Bachtiar's command Tesnahur's princes have such attempts made wherever they think they can see a weak spot, using skilled masons to make a breach, which the defenders fill up again as soon as the attack is beaten off. But all gaps in the ranks of the assailants are speedily filled again. Behind the gates the old kings keep guard, ready to run amok if the enemies should enter. The viziers, though by no means sure that it will be accepted, decide to hoist the white flag, and fighting from their side ceases. With the five kings who remain with him Tesnahur discusses what to do. Tesnahur gives the sign to cease fighting. Bachtiar orders his men to go on, cutting down some of the drum-

mers Tesnahur has sent to make his order known. When Tesnahur has him called, Bachtiar replies to the messenger that the old man should keep quiet and not interfere. Tewangga has hoisted the white flag because he is afraid and implores their pardon; if they accept it, Tewangga will find plenty of subterfuges. He prefers to finish the matter at once. Sword in his hand he urges his men on. The viziers have the white flags pulled down and continue the defence. The old kings prepare for an honourable death and send their children and nobles to the palace of Séri Maharaja Putéri for the last sacrifice.

When Tesnahur receives Bachtiar's answer, he is not satisfied, but in the hope that the sooner the matter here is finished the earlier Bachtiar will take Siwati's body to Jakni, he requests the kings to help him, and in silence they obey.

Bustamam with his party arrives at the edge of the battlefield: Khamis, climbing a tree, informs them of the situation. Jakwan asks Bustamam to leave it to him and his pupils to drive the assailants off. Bustamam agrees, and Jakwan renders his pupils invulnerable with water poured over a talisman, takes the sword which Khamis had used as substitute for the lost one, and leaves the forest with his pupils. Bachtiar thinks that Jakni is arriving, but sees his error when in spite of his shouting Jakwan and his pupils attack his troops. He tries to stop Jakwan, who replies that Bachtiar is a rebel against the Lord of the World, having killed his brother and mother, being disobedient to his father, and deserving death. Bachtiar orders his men to cut down the jungle-people who are assisting Tewangga, but his men dare not fight the Brahmans. The kings ask Tesnahur what they should do, and Bachtiar, called by his uncle, has to convince them that these are traitors against Jakni, who would only be too glad if they were killed. Tesnahur decides that they will accept Bachtiar's word, as he will be responsible to Jakni, and fighting is resumed. The kings fight against the Brahmans. Bachtiar succeeds in having a part of the wall demolished, and the defenders can hardly hold their own. The Brahmans, though slaying countless masses, are unable to come near the wall of the town. The defenders have observed what is happening and take fresh courage, though Bachtiar is already arranging his invulnerables for the last assault.

Bustamam hurries to the battlefield with Johar and Khamis. They reach Jakwan and his pupils and bid him follow them, but are unable to advance as always fresh reinforcements are sent against them. Khamis finds on the battlefield a sword which he thinks suitable for his purpose, and swinging it with both hands succeeds in cutting his way to Bachtiar, who in a great rage attacks him with his sword. Khamis parries his strokes with the sheath of his sword, and Bachtiar turning back to fight at the breach, Khamis attacks the assailants with such force that they are compelled to give up the assault. The viziers are afraid that the wall has been pulled down and hurry to the spot, but Jumaat and Saptu recognize

Khamis and report to the kings, who will not believe them and forbid them to go outside the walls. Howling and crying they throw themselves on the ground. The viziers arrive, and hearing the news allow them to depart, as they may be right and God has rescued them. Jumaat and Saptu rush out and attack the enemies from the back. The uproar increases, and Bustamam doubles his efforts. Bachtiar sees Jumaat, and thinking that the defence is broken gives order not to let anybody escape from the town and to capture Tewangga, who is to be impaled on the battlefield. Tesnahur hears the order and is glad that the victory is gained. Jumaat finds his way to Bustamam, who is startled when he sees him, but Jumaat calms his fears, the attack is broken, and the viziers are already preparing a sally. Khamis and the troops drive off the assailants, and Tewangga and Sĕjan Bada, leaving the town in charge of Aplus and Taniasin, join the attack. The enemy falls back: Bachtiar is unable to rally his men, and they join the troops of the five kings. Attacked from two sides, the troops are separated, and the viziers meet Bustamam and the Brahmins. Bustamam tells them to stay under the walls and close the breach, as the enemy is still superior in numbers. He refuses to enter the town, and Khamis renews the attack and does not leave off when the five kings, alarmed at the return of Bustamam and his friends, give the sign to cease fighting. They inform Tesnahur, who sends them all reserves and his own troops of Siukam, reproaching Bachtiar for not keeping the situation in hand. Bachtiar excuses himself that whilst he had been leading the attack at the breach, the kings had let the new foes pass. Tewangga had made a sally, and attacked from two sides he had been compelled to fall back. If Tesnahur will entrust the troops of Siukam to him, he can save the situation. Tesnahur replies that if Bachtiar had obeyed him when Tewangga hoisted the white flag, they would have obtained all they wanted in an honourable way.

Bachtiar orders the troops of Siukam to assist the five kings. When it grows dark, Bustamam will cease fighting, but Khamis will not, and Johar agrees with Khamis, as otherwise the war will last another year or two. The viziers with their troops are sent back to the town, whilst Johar divides the Brahmins into many little troops who are to attack in turn to make the foes kill each other in the dark. The ruse succeeds, though the kings order torches to be brought and try to draw up their troops in a large circle: the frequent attacks bring everything into disorder. The viziers with their troops reach the town, have the moat dug out and refilled, and the walls repaired.

The fighting continues the next day, but in spite of their immense losses the troops of Tesnahur are still too numerous to be dispersed. Bustamam and his friends are exhausted and send through Jumaat a message to Tewangga that they want rest, and that Tewangga should just prevent the enemy from approaching the walls. Tewangga sends out troops, and Bustamam with the

Brahmans withdraws into the forest, to the great joy of Bachtiar, who gives orders for the final assault. On the following morning the viziers see the enemy troops in echelon, filling the plain and reaching deep into the forest. They withdraw their troops behind the walls. The attack begins. The moat forms a fresh obstacle until it is filled up again, and a fight begins on the walls. The noise of the battle reaches Bustamam, who returns with his friends to the battlefield. Johar says that it is a sin against God to destroy so many human beings, and they should try to kill the leader. The others agree, and like a wedge they cut their way through the masses. The viziers at the same time make a sally, and Bachtiar's troops are thrown into confusion. To fall back is impossible, as Bachtiar and the other kings urge them on and do not allow anybody to turn round. Khamis encounters the king of Sēmbalas, is hit by his mace on the thigh and falls. The king urges his elephant to run him through with its tusks, but the animal turns away and tries to trample Khamis to death. Khamis strikes off its trunk, the elephant falls, but the king jumps up and meet Khamis on foot. Khamis cuts him in two. The king of Basmit starts to fight with Khamis but Bustamam intervenes, requesting Khamis to leave the king to him. The king of Basmit says he wants Khamis to atone for his brother's death, but Bustamam makes him see that it is wrong for him to fight on Bachtiar's side, and the king withdraws from the fight, taking with him the king of Sētin.

Bustamam encounters the king of Kēmusat, kills his elephant, wrests his mace from him, and when the king falls, keeps him down with the mace until Johar has bound him. Bustamam keeps off the princes and knights of Kēmusat, who hasten to the rescue, and the king is brought to Tewangga, who has him put on a carpet and a tent erected over him.

Khamis meets the king of Jusi and challenges him. Johar arrives just in time to prevent a fight, and asking Khamis to find another adversary, he persuades the king to withdraw from the battle.

Bachtiar's troops begin to break under the attack. Khamis shouts to him whether he has not yet had enough, kills his horse and thrashing him with a sandal drives him over the whole battlefield.

The officers who were carrying the body of Jaksun to Jakni, arrive just after the Brahman had been killed by Bustamam, and hearing from the fleeing novices what has happened, return to Bachtiar. They arrive on the day of the battle, and not meeting Bachtiar, report to Tesnahur. Seeing his hope of having Siwati restored to life vanishing, Tesnahur faints. Leaving his tent shortly afterwards, he sees Bachtiar driven over the battlefield by Khamis with his sandal. Tesnahur calls to his princes and knights to help Bachtiar, but nobody moves. Bachtiar sees Tesnahur and runs in his direction. Throwing away the sandal, Khamis draws his sword and shouts that what he does now is wrong, as Bachtiar deserves the sandal or a shoe and no honourable weapon, but

Bachtiar, having caused the death of so many human beings, may not rove on the earth to cause more mischief. He shouts to Bachtiar that the sword which Jakni had stolen and hidden under his fire had now come back to him. Bachtiar, trembling, stops and would call Tesnahur, when Khamis strikes off his head. Seeing Bachtiar dead and Khamis approaching, Tesnahur throws away his arms and his crown and sits down in his tent. Bustamam and Khamis enter, and Bustamam asks him why he has done that; they are compelled to make him prisoner, and if he be a man, Tesnahur will fight. He signs to Khamis, who collects Tesnahur's arms and lays them at the king's feet, but Tesnahur neither moves nor speaks. At Bustamam's order Khamis takes the headkerchief off Tesnahur's head and binds his hands. They leave the tent, Khamis in front, carrying the arms of Tesnahur, the king in the middle, and Bustamam following, carrying Tesnahur's crown and holding the end of the headkerchief. Tesnahur's retinue follows them. They bring him to the viziers, who kiss Tesnahur's hands, bring him to their tent and give him a seat of honour. Bustamam lays the crown at his feet, unbinds him and replaces the headkerchief on his head; Khamis puts down his arms. Bustamam and Khamis sit in front of him with the viziers and do him homage. Bustamam and Khamis leave and join Johar and Jakwan, who are still fighting. Bustamam has the drum of victory beaten, fighting ceases, flags of joy are hoisted on the walls of the town, and the gates are thrown open. Tewangga informs Tesnahur's princes, who are still on the battlefield, that they have nothing to fear and should pay their respects to their master. He sets free the king of Kēmusat and brings him to Tesnahur. The kings of Basmit, Sētin and Jusi come on their own account. The body of Bachtiar is laid in a beautiful coffin.

In the town all preparations have been made, and a palace next to that of Sēri Maharaja Putēri is ready for Tesnahur. On his entrance he is received with the greatest honour. Aplus and Taniasin pay homage to him when he enters the gate and lead him to his palace, where the kings of Bēdērani and Sēmatrani welcome him. Rose-water is sprinkled over his feet, and he is led to the throne. The kings of Bēdērani and Sēmatrani enter and take their places. The coffin with Bachtiar's body is brought in and receives a place of honour. Bustamam, Johar and Khamis bring Siwati's coffin, put it down next to that of Bachtiar, and take their places next to their fathers. Tesnahur, who so far has not spoken a single word, asks the viziers whether this is Bustamam; they reply in the affirmative, and when Tesnahur asks whose son Bustamam is, Sultan Yahya rises and bows to him. The meal is served: Bustamam waits on Tesnahur, who begins to like him and asks him to share his meal. He enquires about Kiwabi; Bustamam replies that he is dead; Sēri Maharaja Putēri had killed him some time ago. Tesnahur is silent, tears trickling down his face. The kings wink at each other when they hear Bustamam's words, and smile. Tesnahur is at a loss to understand, and in his grief refuses

to eat. Tewangga beckons to the king of Siulan to tell Tesnahur that he should not sorrow. Tesnahur puzzled asks Bustamam what crime his son had committed. Bustamam replies that Sēri Maharaja Putēri had hated him but Tesnahur could ask him himself when he met him. Tesnahur is speechless, and the king of Siulan asks him not to heed the words of a naughty village-boy, and to eat first; he would explain the crime later. Raja Shah Malik comes to pay his respects to his father: the king of Siulan laughs and asks Bustamam who it is. Bustamam replies that it is his younger brother, Raja Shah Malik. Tesnahur is startled, and the king of Siulan whispers to him Bustamam and his friends often make fun even of Tewangga and the other viziers. Bustamam asks Raja Shah Malik to eat with them, and when Tesnahur asks him why he has lied to him, Bustamam replies that he had told the truth; he should ask himself whether Sēri Maharaja Putēri had not hated Kiwabi so much that she had killed him; Raja Shah Malik, who now shares their meal with them, is his younger brother. Tesnahur now understands. After the meal the king of Siulan relates the history of Bustamam, and how he has played with Tewangga; Tesnahur laughs and says that then he need not be ashamed that he has been defeated. Tewangga shows him Kerba Bahur's letters; Tesnahur admits that he has been deceived by Bachtiar, and will submit to his brother's judgment.

On the following morning the kings of Bēdērani and Sēmatrani bring Tesnahur to the palace of Sēri Maharaja Putēri, who receives him surrounded by the ladies of her court. Tesnahur is surprised at her beauty and asks whether she is an idol or a human being. Sēri Maharaja Putēri and the princess of Sēmatrani render him homage and Tesnahur kisses Sēri Maharaja Putēri. He asks who the other princess may be; Sēri Maharaja Putēri refers him to Raja Malik, who had brought her hither, adding that she is very glad that the war is over, but that there is still one thing wanting to complete her happiness, and that is to see Tesnahur in full attire. Tesnahur replies that he is still a prisoner, but Sēri Maharaja Putēri says that there are no prisoners in her palace, and Tesnahur accepts the crown which Rakna Mala has ready for him. A report is drawn up to inform Kerba Bahur of the issue of the war, and Tesnahur agrees to Bustamam being married to Sēri Maharaja Putēri before he follows him to Kala Desa. Twenty days will be sufficient, as it will only be the continuation of the festivities interrupted by the war.

Bustamam brings Jakwan to Tesnahur, and the story of the swords and of Jakni's death is narrated to him. Bustamam shows Jakni's heart, observing that all his power has been of no avail to the Brahman, as he had not the true faith. Jakwan agrees and will follow Bustamam's creed. Tesnahur is startled, and when the audience is over, asks Raja Shah Malik to explain the new faith to him. Zahid Saſian teaches him, and Tesnahur is converted.

Bustamam is married to Sēri Maharaja Putēri. Amir Alamur had As-Salathin¹ makes Bustamam sit down at the right of Sēri Maharaja Putēri on the bridal bed, and the Zahid says the prayers. Johar builds the bathing-pavilion. After the ceremonial bath all assemble in the hall of audience. Tesnahur with the kings of Bēdērani and Sēmatrani sits to the left of the throne, all others standing facing it. Tewangga makes Johar stand in front of the viziers. When homage is paid three times, Johar asks the audience whether they consent to Bustamam assuming the crown. All agree, and Johar has the covenant (*ʿuḡd*) confirmed. He asks whether anybody has to bring forward any wishes. The viziers request that their master should not alter the old customs of the country. Johar, facing the throne, repeats the request, Bustamam promises. Bustamam gives a tuft of flowers (*tajok*) to Johar, who puts it on his head and gives his own headkerchief to the chief of kettle-drummers, who winds it round his head and has the kettle-drums sounded. Clad in the full costume of his office, Johar renders homage, saying with bent head; "Daulat, Khalifatullah," and Sultan Yahya and Amir al Amur crown Bustamam and Sēri Maharaja Putēri. Johar proclaims Bustamam to be Sultān Bustamām Khalīfatullāh 'alā'l-ard kull al-akwān wakuwa assultan Bustamām dā'irat al-Khairānī Pādishāh ibn Sultan Yahya al-Ansāri Khalīfatullah. Johar bids the audience bend their heads, threatening death to all who disobey. With the exception of Tesnahur, the kings of Bēdērani and Sēmatrani and the Zahid, who bend their heads over their arms, all bow to the ground and proclaim: "Daulat Tuanku Khalifatullah fi Alaalam." Johar then bids the Bentara raise his head, and the Zahid says the prayers. Princes and officials step aside, and Khamis and the knights throw themselves on the ground, and swear allegiance. Tewangga gives the keys of the treasury to Jumaat, who swears allegiance to Bustamam, and so does Saptu, who is made Lord-High-Steward. Sultan Sējaa leads Bustamam and Sēri Maharaja Putēri into the palace, and Tesnahur presides at the great banquet served in the hall of audience.

Tesnahur's princes and subjects also enter the faith of the Zahid. Raja Shah Malik is married to the princess of Sēmatrani.

When the festivities are ended, Taniasin asks Sēri Maharaja Putēri to allow his daughter to return to him. Sēri Maharaja Putēri consents and loads her with rich gifts. Rakna Mala asks the king and queen of Sēmatrani to give her Nīla Wangka, who should take her place with Sēri Maharaja Putēri for a few days, and Nīlam and Banun as friends. Knowing her intention, the king and queen, with many innuendoes endow the girls, and Rakna Mala goes with them to Tewangga, where Sejan Bada, Aplus and Taniasin are present, saying that Sēri Maharaja Putēri had sent her to bring them the three girls, one for each of them. Tewangga is surprised that Sējān Bada has been passed over, and the latter changes the colour, thinking that Tewangga has been given all the honour, whilst he is considered a mere onlooker. The others try

¹From now on this title is used.

to console him that the present for him had been sent perhaps to his house, but Sējan Bada, feeling slighted and ashamed, says that it does not matter, and he wants to return to his master. Tewangga, much puzzled, asks Rakna Mala, who most innocently replies that Bustamam and Sēri Maharaja Putēri had said that the three viziers might share the three girls amongst themselves, and she had heard that Sējan Bada had already received his share¹. Tewangga understands, and laughing loudly says that the thief and his wife want to stir up their people against each other; first they had incited him against the son of his master, causing him months of sorrow and trouble, and now they want to incite him against Sējan Bada. Turning to the latter he says that Sējan Bada is of no use to them any more; he hates them, because their master loves them, and he hates their master, too, but if he cannot restrain himself, he should summon his men and storm his house. Bustamam and Sēri Maharaja Putēri could then witness their fighting, but now Sējan Bada should get out of his house, as he had become their enemy, and they could not trust him any longer. The others are frightened at these harsh words, and Sējan Bada, utterly confused, requests Aplus to send for the kings of Sēmatrani and Bēdērani. Aplus sends an officer, who meets the kings in Tesnahur's palace: greatly frightened they depart at once, Tesnahur accompanying them to help to settle the quarrel, which could only bring disgrace on Kerbabahur. Tewangga has seen that Aplus has sent the messenger, and asks why Sējan Bada does not leave his house: if he would use force and his own men were not sufficient, he should take Taniasin with him; Aplus would remain on his side. Turning to Taniasin, he bids him reinforce the fence of his house, and if he had not enough men, to call in some more, players and musicians, and to slaughter buffaloes, oxen and sheep to entertain their clan.

Then the others understand and laugh that the house nearly falls in and Sējan Bada has to hold his sides. The kings arrive, and Tewangga explains. They, too, laugh at the mischief Bustamam and Sēri Maharaja Putēri have made again, and the preparations for the fourfold wedding are made. Johar, Khamis, Jumaat and Saptu are carried in sedan-chairs round the town, their friends as sword-dancers in front. They pass the hall of audience, where Bustamam and Sēri Maharaja Putēri present them and the sword-dancers with robes of honour. When the procession reaches the house of Tewangga, he has the doors closed and refuses to admit the scamps. Tesnahur asks who is going to make peace between the parties, and Sultan Sējan and the Zahid negotiate with Tewangga. The latter will consent if the opposite party will promise to be submissive, pay all expenses and obey his wishes. Sējan Bada promises, and Tewangga fixes the cost (*bēlanja*) at 4000 dinars, to be paid cash down. Sējan Bada offers 600, Tewangga insists on 2000, which Sējan Bada says he is unable to pay. He returns to Tes-

¹Alluding to Rakna Mala being already betrothed to Johar.

nahur, and the kings offer 1000 dinars, 400 for Johar, 300 for Khamis, 200 for Jumat and 100 for Saptu. Tewangga consents, the money is fetched, but Tewangga examines every piece and gives back the bad ones. When this is settled, Tewangga orders the brother of Nilawangka to open the door, but the youth starts a bargain of his own with Sējan Bada and extorts 100 dinars, payable in advance, to buy a new suit of clothes. At last they are admitted Sultan Sējaa brings the four to the kings to render them homage, and the Zahid marries Nilawangka to Khamis, Nilam to Jumaat and Banun to Saptu. When they are brought to the bridal beds, Johar refuses to sit down next to Rakna Mala until the kings have given him two robes of honour. At the request of Tesnahur the kings of Sēmatrani and Bēdērani pour rose-water and flowers over Johar and Rakna Mala. The Zahid gives Khamis two robes of honour. Tesnahur asks whether these magnificent preparations should be made a custom for the future, and the viziers reply that such is their wish, that the old custom be broken with, and this new one instituted. They request the kings to withdraw, as the ladies would be coming. The kings retire, and the ladies have their own feast, until the bridal curtains are let down.

Kerbabahur, having received the letter which Tewangga and Sējan Bada had written when Bustamam had been carried away by the dragon, and afraid of Jakni's power, has called up the kings of Gujerat and Jēzam to march with their troops to Tahta Yemen and bring Sēri Maharaja Putēri and the viziers to Kaladesa. They obey and meet on the way the messenger with report of the happy issue of the war. They send him on to Kerbabahur and proceed to Tahta Yemen to accompany Bustamam to Kaladesa. They are joined by Jaklas, who has heard from Jamita what has happened to Jakni, and has departed at once with his pupils for Tahta Yemen. They are received by Bustamam in the hall of audience, where the kings of Gujerat and Jēzam render homage to Tesnahur and respectfully greet the kings of Bēdērani and Sēmatrani. Jaklas renders homage to Bustamam, to the great surprise of Tesnahur and the other kings, as they have never seen a Brahman humiliate himself before a prince. Bustamam bids his brother, as he calls Jaklas, raise his head, as not he deserves respect but God, Who had made him as well as the Brahmans; Jaklas should not follow Jakni and the other Brahmans who worshipped fire and the sun, both things which God had but created. If Jaklas would follow the true way, he would find happiness on earth and in eternity. Jaklas replies that a sign had already been given him that he would find the true way if he would go to Bustamam, and the latter asks Aplus to help the Brahman. Bustamam gives him the heart of Jakni, but Jaklas returns it saying that having found already what he desired, he has no more use for it. Tesnahur and the king of Gujerat and his brothers think that Bustamam has really deserved his luck; the king of Jēzam is amazed, and the Zahid tells him the parable of the prince who has no will of his own and only does what his people want, and explains it to him. Jaklas, the king of Jēzam and many

other princes come every evening to hear the teachings of Aplus, and are converted to the new faith. Jaklas asks and obtains Bustamam's permission to return to the jungle in order to teach the new faith to his pupils.

The preparations for the journey to Kaladesa are made; the Zahid and Sultan Sējaa Amir Alamur had as-Salathin return to their countries, Sultan Sējaa to visit Bustamam frequently.

Bustamam tries to have Amir Bedla married, but the latter declines, having a wife and children in Gujerat. Bustamam would adopt one of his children, and Bedla assents.

Accompanied by all the kings, Bustamam and Sēri Maharaja Putēri depart for Kaladesa.

Jaklas returns to Mount Mahaguna. The news of Jakni's death has spread among all Brahmans, and when it becomes known that Jaklas has visited Bustamam, they come to him, and having heard his report about Bustamam, they ask Jaklas to bring them to him to sue for peace and protection. They would bring him pieces of rare woods as presents, but Jaklas suggests that they should fetch the gold and silver which for centuries has accumulated in Jakni's fire-place. An immense procession, loaded with gold and silver, led by Jaklas and 800 Brahmans, departs for Tahta Yemen. They meet Bustamam on the way to Kaladesa and follow him.

When Bustamam reaches Kaladesa, the gates remain closed before the king of Jēzam, who with his troops forms the advance-guard. He turns with his army to the left and waits. The other kings, including Tesnahur, meet with the same fate, and only when Johar, leading the carriage of Bustamam and Sēri Maharaja Putēri, with Tewangga and Sējan Bada following, approaches, the guns are fired, the gate is thrown open, and Kerbabahur's viziers greet Johar. Bustamam enters the town, and behind him Tesnahur and the other kings are allowed to pass. The carriage of Bustamam and Sēri Maharaja Putēri is brought into the palace, and Tewangga carries Bustamam, Sējan Bada Sēri Maharaja Putēri into the hall of audience and put them down in front of the throne. Johar and Rakna Mala take their seats behind them. Raja Shah Malik and the princess of Sēmatrani to their left, and behind them Tesnahur, the viziers and the other princes.

Kerbabahur takes his seat on the throne and all bow to the ground. When he sees Bustamam and Sēri Maharaja Putēri, he is startled and asks Tewangga, whether they are human beings or golden idols. Sitting down between Bustamam and Sēri Maharaja Putēri, he passes his hand over their faces and asks the princess whether she is Sēri Maharaja Putēri? She replies, "I am the rag to dust the sandals of Your Majesty," and Kerbabahur praises Tewangga that he has brought him these beautiful children. He carries the two to the throne, takes them on his knees, runs into his palace to fetch his spectacles, lies down before them to have a better look at them, and so on. He recognizes Johar and Khamis, whom

he has seen formerly; has he not given him a gold-chain for Sēri Maharaja Putēri? Johar answers in the affirmative, and Kerba Bahur adds that he had promised Johar to give him a place at his daughter's court, but is now exempt from his promise. Raja Shah Malik has to present his wife to Kerba Bahur, who is very pleased with her and praises Raja Shah Malik that he has obeyed Tewangga and thereby preserved his life. But he should drive his father from the court, as he is only good for looking after cattle. Sēri Maharaja Putēri intervenes and asks Kerba Bahur not to be angry with the father of her younger brother, but to forget the past. Kerbabahur laughs and tells Tesnahur that he has done well to come with his daughter, as otherwise he would have made him a herdsman. Now he can only forgive him, but Tesnahur shall be subject to Sēri Maharaja Putēri, whom he will have to obey in future. He runs into his jewel-room and returns with two magnificent crowns; that for Sēri Maharaja Putēri being too big, he carries her into his jewel-room, where thousands of crowns are collected, and chooses one that fits. When he carries her back, she takes a net of pearls which she sees hanging over the door, and hangs it over her crown. Kerbabahur asks whence she has got the pearls, and hearing that they are his and just taken by her from his jewel-room, he fetches a box with strings of pearls and spreads them over her like a shawl flowing down from her crown. That is until the present day the fashion of the ladies of Khairani, which the Arabs have imitated, but in an altered form.

Kerbabahur gives to Tewangga the income of ten, and to Sējan Bada that of five subject countries: he cannot make them princes, as they do not belong to the princely caste. Sēri Maharaja Putēri asks him to have the impaled picture of the princess of Samaluki removed: Kerbabahur asks her, whether she has not read the letter; in that country they had reversed the custom of many thousand years and had instituted a woman's government. Sēri Maharaja Putēri replies that being a small country, at the mercy of every stronger prince, their only way to safety was to make it a shame to attack them. Kerbabahur orders the picture and the letter to be taken away, and Sēri Maharaja Putēri suggests that the princess of Samaluki should be married to Bahrum Shah, her younger brother. Kerbabahur agrees and orders Johar to write a letter to the effect that Kerbabahur acknowledges that Samaluki has been right and recognizes its constitution, that his former wish has been unreasonable, as the king of Samaluki belongs to another race and creed, but having now a son-in-law of the same race and faith, the king should come and have a look at him. If he were satisfied, the king should accept Bustamam's younger brother as son-in-law and thereby find in Kerbabahur an ally in every trouble. At a hint of Bustamam Johar suggests that Tesnahur is sent as ambassador, and Kerbabahur agrees.

Tesnahur is going to take his leave, when the big procession of the Brahmans and their pupils arrives. Compared by the author

to herds of pigs and monkeys.) Kerba Bahur is startled, but Tewangga claims him. The Brahmans take their seats in the hall, Jaklas in front. Kerba Bahur would render him homage. Sēri Maharaja Putēri forbids it and even holds his hands when he insists. Jaklas, seeing Bustamam, pays homage to him, bowing to the ground, and the other Brahmans and pupils follow his example. Speechless Kerbabahur gazes at the masses of Brahmans and pupils, reaching to the gate of the town, all bowing down (like a herd of pigs rooting in the ground.) Jaklas explains what has brought them, and Bustamam promises his protection and asks Aplus to explain the true way to those who do not yet know it. Surprised Kerbabahur asks for an explanation, which Bustamam gives, saying that Ikhlās (as Jaklas is now called) has already found it. At Kerbabahur's further questions, Ikhlās, Raja Shah Malik and the king of Guha, the latter speaking also for the other kings, acknowledge that formerly they have followed the wrong path, but have now found the true one. Kerbabahur observes that he also must be on the wrong way, and asks Bustamam to teach him. Sēri Maharaja Putēri kisses him on the breast and says that they have come to bring him eternal happiness and salvation. Kerbabahur accepts the new faith. Tewangga and Sējan Bada send men already confirmed in the new faith to teach the people. Kerbabahur asks Ikhlās what has become of Jakni, and is surprised to hear that he has been killed by Bustamam, who must show him the Brahman's heart. Kerbabahur carries Bustamam and Sēri Maharaja Putēri into his palace: at a sign from Rakna Mala the three princesses (the queens of Sēmatrani, Bēdērani and Siti Sēlamih?) follow him. Kerbabahur asks who they are; Rakna Mala says that if he carries the head, the feet and the tail will follow unless he tears them off. Kerba Bahur laughs and presents Bustamam and Sēri Maharaja Putēri to his queen, who is so pleased with them that she forgets her grief over the death of Bachtīar. The meal is served to them in the palace, whilst the other guests are feasted in the hall of audience.

On the following morning Sēri Maharaja Putēri supervises the preparation of the morning-meal, having all arrack and tuwak removed with their vessels. Kerbabahur is so delighted with the smell of the food that he seizes a dish and runs with it into the hall of audience, praising the viziers who have chosen for him a daughter so well versed in cookery. He asks the princes and ministers to taste the food, and Sēri Maharaja Putēri sends Rakna Mala to him with seventy maids carrying other dishes. Kerbabahur has them distributed amongst the audience, saying that a few months of such food will restore him to his former strength and plumpness. His own dish he carries back into the palace and takes his meal with his family. Whilst Sēri Maharaja Putēri teaches his queen and her ladies the new faith, Kerbabahur carries Bustamam into the hall of audience and keeps him on his knee, where Bustamam looks like a child of two years compared with the mighty giant.

Kerbabahur sees the pupils of the Brahmans still lying on the ground, and the Bentara explains that they still carry the presents of the Brahmans. Kerbabahur asks for whom the presents are destined, and hearing that they are for Bustamam, says that his son has apparently become the lord of all the world. Johar takes the gold and silver from the pupils, and Kerbabahur wonders at the immense quantities. Ikhlas says that these are no presents, but the property of Bustamam, and explains where the treasure comes from. Bustamam has all the gold and silver divided into four parts, one for the viziers, one for the vassal-princes, and two for Johar and his friends, explaining to the astonished Kerbabahur that this dirt (*daki*) of the earth is of no value.

Sēri Maharaja Putēri sends cakes and sherbet into the hall of audience, and Kerbabahur asks how many times they are going to eat, but is delighted when he has tasted the good things and says no wonder Tewangga and Sējān Bada, having had such a good time, have returned much plumper than they went. The king of Siulan mentions the inexhaustible bundle of Kakaduni; Bustamam shows it to Kerbabahur and makes him taste the food. The king of Siulan mentions the water which Bustamam carries with him, and Johar thrusts the dagger into the ground outside the audience-hall. Kerbabahur gives him a golden cup to fetch some of the water for him to try, but seeing the excitement amongst the people when the water gushes forth, runs thither, drinks some of the water out of his hollow hand, comes back, takes the cup from Johar's hand, and unconcerned about the people round him begins to bathe. As his crown hinders him, he puts it on Johar's head and begins to wallow comfortably in the water gushing forth. His ministers sit down round him, and the kings of Bēdērani and Sēmatrani, left alone in the hall of audience, join him and rub him down. After his bath Kerbabahur runs back, snatches the dagger from Bustamam, who has just time to render it harmless by a charm, shows it to his ministers, rushes back into the palace, and without changing his wet clothes, thrusts the dagger deep into the ground, shouting to his queen to come quickly and have a bath with her ladies. The palace in nearly flooded, and Kerbabahur runs back to Tewangga and asks him what to do. Tewangga promises to have the well stopped and Kerbabahur returns the dagger to Bustamam and goes to change his clothes. He misses his crown, and returning into the hall of audience asks Tewangga what he has done with it. Tewangga replying that he has put it on Johar's head, Kerbabahur says to Johar that he is a lucky man that he may wear the crown, which is a gift of the Lord of the World; in his joy over the bath he had not paid any attention to where he had put it. Thus Johar should keep it, although not of the race of princes, but God had raised him above all princes owing to the blessing that rests on Bustamam. Johar should continue as vizier of Bustamam, but when once he had children of his own, he should give the crown to his son as prince over a big realm. Johar respectfully tenders his thanks and is given a seat amongst the vassal-princes.

The king of Siukam reaches Samaluki and is received with great honour by the female ministers. The queen approves of Kerbabahur's proposal, and a lady of the royal family, with female ministers and officers, accompanies the king of Siukam back to Kaladesa, to find out about the origin of the king of Sēmatrani, his race and so forth. Kerba Bahur is surprised at this female embassy. The letter is read: the queen of Samaluki thanks Kerbabahur for his goodwill and sends a plenipotentiary to look at the prince. If she approves of him, she would ask for his hand, and the queen of Samaluki would come to Kaladesa to marry the prince to her daughter and take him back to her country. Kerbabahur laughs and has Bahrum Shah called, but the ambassadress looks more at Bustamam, and Kerbabahur cannot get on with her, as he does not know what she wants. Bustamam understands and asks Aplus to help her. Sēri Maharaja Putēri appears, wearing her crown, and Kerbabahur explaining that his daughter has been crowned queen of Tahta Yemen, the ambassadress understands that Sēri Maharaja Putēri has been adopted by him. A meal is served in the hall of audience; the ambassadress is uneasy, not knowing whether the food is clean or not, but Aplus disperses her fears with his "Bismillah." He houses her in his own home, gives her all the information she requires and writes down for her the genealogy of Sultan Yahya, which reads as follows:—

Al-hamdu lillāhi rabbi'l-'alamīn, ammā ba'du, i'lam ini silsilah Sultān al-'Arifīn, wahuwa as-sultān Yahya al-Ansārī ibn as-sultān Ahmad ibn as-sultān Ain ad-Dīn ibn as-sultān Sulaimān ibn Bahrūm ibn Ishāk ibn Ja'far Madanī ibn 'Umar al-Madanī ibn Tāhā ibn an-Nāsirīn al-Ansārī-rahima 'llāhu ta'ālā 'alaihi wa 'alā ahlihi ajma'in.

He gives to this the following history: A man of foreign descent, Amir Siusin, was the chief (Kētuhā) of Bandar Amasad. Being attacked by the Persians, and defeated, Siusin asked Sultan Kēbir Shah "of our country"¹ for assistance. Kēbir sent him an army under Ishak, the son of Kēbir's elder brother Jafar of Mēdina. Ishak remained with Siusin, and at the latter's death his uncle Kēbir gave him Bandar Amasad. When 15 years later the king of Sēmatrani died, childless, a vizier of Sēmatrani tried to usurp the reign of Bandar Amasad (Sēmatrani?), and there were disturbances. At that time the merchants of the island of Sandēlas, and Sarit, from the end of the continent of India (*hujung tanah Hindia*) from Lanja and Basorah used to come to Bandar Amasad, but could not proceed to Sēmatrani on account of the hostilities. One of the viziers of Sēmatrani was already negotiating with Ishak to make an end to the disturbances, but Ishak would not act without his uncle's order, until all viziers joined in the request, when he sent his second son, Bahrum, with the merchants and sufficient troops to Sēmatrani. Order was restored, and on the request of the

¹Nēgēri *Kami* cannot refer to Tēmatrani, the country of Aplus, but must refer to the country of the author.

merchants, Kēbir consenting, Ishak made Bahrum ruler of Sēmatrani to prevent further disturbances. Ishak had sent his first son Shayab to Kēbir with the report of what he had done, and Kēbir kept Shayab in his country and married him there in order to prevent envy and quarrels between the brothers. When Ishak died, his third son, Abdulfatah, inherited his realm.

Bahrum had two sons, Sulaiman and Kasim; at Bahrum's death Sulaiman ascended the throne and made Kasim his co-regent; together they brought Sēmatrani to great welfare. Sulaiman had a son, Ain ad-Din; Kasim two daughters. Ain ad-Din married the eldest daughter of Kasim, the second daughter was married to Abdulwahid, the son of Abdulfatah and grandson of Ishak. Once there were hostilities between Sēmatrani and Bēdērani, and Sultan Thalib Shah, the son of Sultan Kēbir, came and made peace between the two countries. He made Ain ad-Din Sultan of Sēmatrani, and Abdulwahid Amir of Bandar Amasad, under Sultan Ain ad-Din. Abdulfatah had one daughter and two sons, Thamirah and Ahmad Palus. Thamirah's son, Abdulwahid, became later Amir of Bandar Amasad, and Ahmad Palus' son, Husain Palus, was made by Sultan Thalib to reign (as vice-regent?) under Sultan Ain-ad-Din. Since that time the dynasty had not changed¹.

The ambassadress is satisfied and asks for Bahrum Shah's hand: the queen of Samaluki to come over to Kaladesa and marry him to her daughter, or if she cannot leave the country, to send a suitable embassy to fetch him.

Kerbabahur reads the genealogy of Sultan Yahya and is highly pleased with the noble lineage of his adopted daughter. The letter to Samaluki is written and sealed with Kerbabahur's seal. Kerbabahur asks Bustamam why he has not sealed the letter, and insists on his doing so, as he will have no more to do with these things. Tewangga has a seal engraved for Bustamam with the inscription: Sultan Bustamam ibn Sultan Yahya. Kerbabahur reads it and throws it at Tewangga's feet saying why Tewangga still sticks to the old order of things: on this day he gives up his reign to his son-in-law. All are speechless with surprise; Tewangga has a seal engraved with the incscription: "Sultan Bustamām Khalīfatullāh 'alā'l-ard kull al-akwān wakuwa as-sultān Bustamām dā'irat al-Khairānī Pādīshāh ibn Sultān Yahya al-Ansāri Khalīfatullāh." Everybody, according to the old custom, swears allegiance to Bustamam as sovereign of Khairani, to whom all princes are subject.

Ikhlas and his friends take leave to spread the new faith in the country, and Bustamam gives them rich presents and suitable names.

It is decided to send Bahrum Shah to Samaluki; the kings of Kēmusat, Guha and Jēzam and his uncle Amir Bahud bring him thither and attend his marriage with the princess of Samaluki. Kerba Bahur asks Bustamam why he has sent Bahrum Shah to live under female sway; Bustamam replies that that is all Bahrum Shah is good for, and that it will make him assert himself if he has any wit left.

¹This history is not very clear in the text.

When Amir Bahud returns with the kings, Bustamam sends him with his son Thahak back to Samaluki, much against Amir Bahud's wish, to look after Bahrum Shah and find a suitable wife for Thahak.

Johar has made the necessary preparations for the return to Tahta Yemen, and Bustamam and Sēri Maharaja Putēri depart, accompanied by Kerbabahur to the edge of the forest. When at last they have taken leave, Kerbabahur sits down on a rock and with a heavy heart bids Tewangga and Sējan Bada take good care of his children. His words are so full of love and anxiety for them, that the viziers, who have great pity for their old master, promise to bring them to Kaladesa whenever his longing for them becomes too great. Kerba Bahur leaves it to the viziers to do with the dead body of Bachtiar what they like, as Bachtiar is his son no more. The viziers bring Kerbabahur back to Kaladesa, and when weeping they take leave of him, he strokes their heads saying that only God can reward them for the service they have rendered him.

Bustamam safely reaches Tahta Yemen, where Sultan Sējaa had as-Salathin receives the party according to custom.

Tesnahun is in great sorrow; envy torments him, as he does not understand the goodness and righteousness of his elder brother, and that it is only just that Bustamam is made his heir. His moroseness increases daily, and Tewangga and Sējaa Bada notice it. When one day the viziers discuss the return of Sultan Sējaa to Sēmatrani, Tewangga asks whether the king of Bēdērani should not also return to his kingdom, as there is nothing more for him to do in Tahta Yemen. Aplus replies that it is impossible for him to leave his children amongst enemies. Tewangga is startled and opines that there are no enemies left, but Aplus replies that they have done with the smaller enemy; the greater one they will still have to fight with. Tewangga and Sējan Bada now understand, and they go together to Tesnahun to see whether they cannot comfort him.

Tesnahun is just discussing with Sultan Yahya and Maharaja Bēniasin how he can obtain permission to return to his country, and upon their advice has sent for Johar. When the viziers arrive, he puts the same question to them; they give him the same advice, and Tesnahun agrees that Johar is the only one to whom he can state his wish. Johar, who is just entering, hears the last words and retards his steps in order to gain more time for thinking; Tewangga notices this. Tesnahun asks Johar to help him to obtain permission to bury his dead son in his own country. Johar replies that he had already prepared everything, and that from his side there were no objections. Tesnahun says that there is no need for his master to accompany him, and Johar should only obtain permission for him to depart. Johar replies that Tesnahun had better apply to the old viziers, who have far more experience and always know beforehand what is going to happen; he himself is only a boy, which they make him feel again and again without his being able to prevent it, and his master feels it too, as Tesnahun knows.

He would rather not give any advice in this matter. The viziers know what he is aiming at; Tesnahur replies that he had often heard the viziers praise Johar's sagacity, why was Johar now talking in that way? Johar points out in veiled terms that thanks to the viziers his master is now united by very close ties to Kerbabahur, who had made over to Bustamam his crown and his treasures. Bustamam had rendered him the *sembah* and was still longing to kiss Kerbabahur's feet instead of killing him, which he could easily have done, as he had nobody to fear. That was the work of the viziers, and another one was that they had made Kiwabi his master's brother-in-law. He himself had at first wondered how all that had come to pass, but he now sees that his master and he had only done what the viziers had decided in order to serve their master and conserve their own good names.

The viziers are overjoyed at Johar's delicate words, which dispose of Tesnahur's reasons for envy and embitterment. Tesnahur sees now that this has been the only way to get out of this affair, without dishonour, and his sad face brightens. Taniasin asks Johar whether he would not have advised his master to take everything by force; Johar denies it. Tesnahur praises him and his master for their sagacity and goodness, and prays to God to assist them with His blessing. He himself has erred and only now sees right and wrong. Johar replies that it has been very difficult, as Tewangga had so hidden his thoughts and ideas that he, Johar, himself had thought Tewangga to have been on their side, whilst actually he had only been intent on the salvation of his master, whom he had saved, as it were from suicide by turning things in such a way that the man who was going to destroy himself had now been rendered every honour by his enemy. Tesnahur says Johar should not be angry with Tewangga, who had never intended to work to the prejudice of Bustamam, but to serve him. The honour which Bustamam had rendered to Kerbabahur could only redound to Bustamam's own honour in showing his love and respect of old age. The wealth of this world is useless, as Bustamam had shown by giving away the treasures of the Brahmans. He himself had suspected the viziers of working to the detriment of his elder brother and himself, especially when they had caused Kerbabahur to make over to Bustamam his sovereign power and his treasures, but now he sees the justness of their action. Johar would experience the same feeling if he would weigh the matter and he should honour the old viziers and not be angry with them. Johar should watch over Raja Shah Malik as over his own brother, and all he would ask Johar for himself was to obtain permission for him to look after his troops, who were still camping on the battlefield, and bring them back to his uountry. After that, he would return, as he would not leave Bustamam, to whom his elder brother had entrusted him, nor his son, who was going to stay in Tahta Yemen.

The dead body of Siwati is to be buried at Tahta Yemen before Tesnahur leaves to look after his troops.

The viziers leave Tesnahur and return to Tewangga's house where they embrace Johar and praise his sagacity.

The dead bodies of Siwati and Bachtiar are buried with due honours, Bustamam himself distributing the alms at the funeral rites, which advances him further in Tesnahur's affection. Preparations are then made for Tesnahur's departure.

Kerbabahur finds Kaladesa very lonely since Bustamam's departure, and leaves suddenly with his queen for Tahta Yemen with a great train. The viziers at Tahta Yemen hear the rumour of it only two days before his arrival and do not believe it, but Johar thinks it possible and advises that the vassal-princes should leave at once to meet Kerbabahur; if the rumour proves false, they could proceed further to bring Tesnahur to Siukam. When Bustamam and Sēri Maharaja Putēri hear of Kerbabahur's coming, they order at once their travelling-coach and depart at full speed without caring for anything else. Johar meets them and jumps upon the spare-horse tied to the coach, but is unable to stop them. Tesnahur and the viziers take the first horses they can lay hold of and follow them, and only with great pain Sultan Sējaa can persuade the kings of Sēmatrani and Bēdērani to stay with him and make the necessary preparations for the visitors.

Bustamam has gone on, and night comes. Nothing is prepared, the viziers are far behind, and train and provisions still further. Bustamam calls Chēkur and Jērangau to light the way with torches; Johar follows as well as he can. They reach Kerbabahur's camp, where the guards, seeing the torches but not the bearers, take them for spirits of the jungle and will not let them enter. Kerbabahur awakes and sends a knight to find out; the knight approaches with his sword drawn, and not believing that Bustamam and Sēri Maharaja Putēri arrive in the middle of the night and alone, orders the jungle-spirits to depart. Bustamam and Johar laugh; Kerbabahur recognizes their voices and orders to let the visitors pass. Bustamam and Sēri Maharaja Putēri hurry to him, and he takes them into his tent. Johar follows and has to explain; Kerbabahur praises him that he did not suffer his master to depart without him, as it is the duty of a faithful vizier, and since that time it has become the custom of the kings of the mainland (sa-bēlah tanah bēsar) up to the present day that their viziers follow them wherever they go.

The next morning they proceed on their journey with full music, to enable the other princes to join them. Johar, in order to prevent another passing of a night on the way, hurries to the despair of the viziers who fear that nothing has been prepared for the guests, and who are unable to overtake them. But when they reach Tahta Yemen, Sultan Sējaa has everything prepared, and Kerbabahur is received with due honour. He and his queen are brought into the palace, and Bustamam takes Kerbabahur to the hall of audience, where he is introduced to the other kings and hears the story of Siti Sēlamih. After a meal in the palace Kerbabahur states that

for the first time since Bustamam's departure from Kaladesa he has eaten his fill, as the people in his own palace do not know how to cook.

For two months Kerbabahur stays at Tahta Yemen; when he returns to Kaladesa, Bustamam sends all other kings back to their countries, including Sultan Yahya and Maharaja Bēniasin; only Sultan Sējaa Amir al-Amur hadd as-Salathin is to stay with him at his special request. At the leave-taking Amir Bedla is treated with special distinction, to the great joy of his father, the king of Gujerat. All kings, however, have to accompany Kerbabahur to Kaladesa before they proceed to their own countries. Bustamam and Sēri Maharaja Putēri accompany Kerbabahur for a day's journey before they take their final leave, and return sadly to Tahta Yemen, accompanied by Tewangga and Sējan Bada, to whose care their master has entrusted his children. The kings of Bēdērani and Sēmatrani also return to their countries, Siti Sēlamih to follow her husband, the king of Sēmatrani, but to visit her children every few months.

Chēkur and Jērangau also ask permission to return to Mount Thēlahin. Bustamam and Sēri Maharaja Putēri are loath to let them go; Chēkur takes the betel-scissors from Rakna Mala's hand, and she and Jērangau each cut off one of their fingers, and plant them in a flower pot. A little tree grows from them, and Chēkur says that if Bustamam and Sēri Maharaja Putēri were longing for them, they should smell a leaf of the tree, which would make the longing disappear. If this would not avail, they should powder a leaf and use it as a cosmetic, and Chēkur and Jērangau would arrive at the next sunrise. When Sēri Maharaja Putēri had children, she should use the leaves of the tree for medicine, and both of them would come to help to bring up the children. The fairies then disappear, report to Maharaja Thēlahut and return to their parents.

Bustamam feels sad when all the other kings have left him alone in Tahta Yemen, and rarely appears in the hall of audience. He sends Bahrum Shah reports of what is happening to Samaluki and receives his replies and presents. With the other kings, who frequently visit him, he keeps up a steady intercourse, especially with Kerbabahur.

Finished in the year 1332, published by Haji Mohamed Amin in Singapore.

A TRENGGANU VOCABULARY.

by P. A. B. McKERRON, M.C.S.

The first part of the vocabulary is composed of words jotted down at odd moments during a residence of two and a half years in the State, and consists entirely of words which either cannot be found at all in Wilkinson's Malay Dictionary, or else are used in Trengganu with a different meaning, or shade of meaning from that given in the Dictionary.

The words marked (B) were collected in the Besut District where the last half of my service in the State was spent and where the inhabitants talk almost a pure Kelantan dialect. Although some of these are not strictly speaking Trengganu words, I have decided to leave them in this Vocabulary.

The second part of the vocabulary consists of words commonly used in official correspondence in Trengganu (which by the way is still conducted in Jawi) and knowledge of these would be extremely useful to a Government officer taking up an appointment there for the first time. A very large proportion of them are pure Arabic words, several of which are in use fairly generally, but it will be noticed that many of them have come to have specialised meanings in Trengganu.

PART I.

Achap	Often.
Banggol	A low hill. (a'so in Perak R.O.W.) c.f., <i>manggul</i> (Kedah) high land, a hummock.
Běradu (B)	To stop or cease doing anything.
Běris	A low sandy ridge.
Běsek (B)	The early morning before the dew has dried.
Bětab	Dull, stupid.
Chapek	Illiterate. (slang) lit. lame. <i>Buta</i> (blind) is often used in the same way for one unable to read.
Chělēkong	Crooked, not "straight" (slang).
Chok bětul	A draining spade used for cutting round holes for fence posts or house timbers.
Cholok	Matches.
Dawas (B)	Exhausted (of soil), in need of manure.
Děpi (=di-těpi)	Close to, along side of.
Gayong	Trengganu style of wrestling.
Gěmbang	A floating bath-house. (cf. <i>gambang</i> R.O.W.)
Gěrai	A market stall.
Gětek	Also, partly. e.g. <i>aku gětek</i> =I also. <i>baroh gětek gong gětek</i> =partly swamp, partly high land.

Gobek api	A cylinder and piston for making fire. These contrivances are used by the natives of the interior districts for whom matches are still too expensive.
Gogek-gogek	Shivering with cold cf. <i>gogok</i> (Wilk).
Gong	A low ridge.
Hampus	Just awash. cf. <i>kapus</i> (Wilk) to efface, to wash out.
Hak	The Trengganu native rarely completes a sentence without using this word. Some of its commonest meanings are best illustrated by examples: <i>Hak kèrajaan</i> —the property of the Government. <i>Hak sedia</i> —the “status quo,” the existing order. <i>Hak merah</i> —the red one. <i>Hak ini</i> —this one.
Jak	A bamboo basket used for packing dried fish for export.
Jangat (B)	An arrangement of knives set round a circular hole in a barricade erected for a pig drive.
Jëmërang	Across river. Possibly a variant of <i>sëbërang</i> .
Jënak (B)	Very many, abundant, numerous. (but never used of persons).
Jërëloh	Deep, of a swamp. (<i>Jërëloh</i> : blind; perhaps a blind swamp). (cf. <i>jëloh</i> Johore, <i>jërëloh</i> Kedah R.O.W.)
Kaki tidor	North : Used in description of land
Këpala tidor	South : boundaries (See J.R. A.S. Vol. IV Part I Page 133).
Kapit	To fasten on with slats as woven grass matting to a frame.
Këmburan	River silt.
Kërongkong	Empty, hollow as of a box. (Wilk. the gullet). cf. <i>gëronggong</i> .
Kokek	“Argy-bargy.” (slang).
Kërawat	Wire. (variant of <i>kawat</i>).
Lada	Chilli. <i>chabai</i> is unknown in Trengganu.
Mëngenting (B)	To lay a claim to. (especially of land).
Mùk	Solid keel of a boat.
Padi dol (B)	Rice planted by sowing the seed on wet land. A common method of planting in Besut when nurseries have been destroyed by floods or there is no time to transplant.

Padi taburan (B)	Rice planted by simply scattering the seed on dry ploughed land.
Padok	A golf teeing ground.
Panggong (B)	An irrigation dam.
Pěraryoh	A paddle.
Rajin	Expert, skilled at, e.g., <i>saya ta' rajin main bola</i> I am not an expert player. <i>Dia yang rajin buat</i> he is the expert at it.
Râng	A bamboo platform on the bank of a tidal river used for drying fish.
Rěnek	A nickname for a short, stout man. [fire, delicate, Wilk].
Sayup	Late in the season, especially of padi planting.
Sělalū	Used invariably in Trengganu with the meaning that <i>langsung</i> has in the South of the Peninsula. <i>Saya pěrgi sělalū</i> I am just going; I am off at once.
Semua	The following example illustrates the Trengganu use of this word. <i>Kuala kita tidak mati sěmua</i> our river-mouth does not stay fixed.
Senggang	About, approximately. <i>Senggang běrapa lama 'dah</i> Do you remember about how long ago?
Sengkat	Up to, up to the limit. e.g., <i>sengkat muat-nya</i> the load limit of a boat.
Sěpěrong	A Trengganu vernacular variant of <i>těropong</i> , a telescope.
S'tangan	Malay kerchief head-dress (= <i>sapu tangan</i>).
Suangan (B)	A strip of land.
Takek (B)	To tap a tree for damar. [to notch slightly, Wilk].
Tampang	<i>Ampat tampang</i> four sided.
Těběng (B)	To try one's hardest.
Tělinga (B)	The "take off" of an irrigation channel just above a dam.
Tempek	To post (of a notice or proclamation). Never <i>tampal</i> which is the word commonly used in the Peninsula.
Tian (B)	A footbridge. Contraction of <i>titian</i> .
Turut	To go and get, to rout out (slang). <i>Pěrgi turut rokok</i> go and see if you can get some cigarettes.

PART II.

Anggaran	(1) a proposal. (2) a draft: <i>anggaran estimate</i> draft Estimates.
Ain (Ar)	Property.
Allowance jamuan	Entertainment allowance.
„ lawatan	Travelling, transport allowance.
„ pasangan	Lighting allowance.
Amanah (Ar)	A deposit, a trust.
Baitul-mal (Ar)	<i>Pějabat baitul-mal</i> a branch of the Department of Religious affairs which deals with estates of intestates.
Běrkěnaan	Concerning, with regard to, also “concerned” e.g., <i>Jajahan yang běrkěnaan</i> the district concerned.
Butir-butir	details. e.g., <i>butir² kěnyataan</i> detailed particulars.
Chadangan	A provision, a vote in the “Estimates” sense.
Chatar (Eng)	to charter, to contract. <i>Chatarkan kěreta sewa dua tiga ringgit tiap² kali</i> to hire a car by arrangement at \$2 or \$3 a time.
Chawangan	A branch or sub-department.
Chetak	To print (the word “chap” is very rarely used in this sense in Trengganu). <i>Pějabat Chetak</i> The Govt. Printing Office.
Fasal (Ar)	A section in an Enactment c.f. <i>sharat</i> , a clause contained in a section of an Enactment.
Gelura	The North East Monsoon.
Guaman (Ar)	A case.
Guaman jěnayāt (Ar)	Criminal case.
Guaman mal (Ar)	Civil Case.
Idar	to refer a question. <i>Sila idarkan kapada dia</i> please refer this to him.
Ishtahar (Ar)	A Government proclamation having the force of law, an “Order of Council.”
Itifaq (Ar)	A decision of State Council.
Jawatan	An appointment.
Juma'ah měntri	The Council of Ministers.
Kantor	Court fees.
Kěrja raya	Public Works. <i>Pějabat Kěrja Raya</i> the P.W.D.
Kesamaran	The common word for misunderstanding. “obscurity (from <i>samar</i> to conceal or disguise (Wilk.)

Khairat (Ar)	Charity.
Khanzir (Ar)	Pig, a euphemism employed when it is necessary to refer to this unclean animal in official correspondence.
Khusus (Ar)	A decision, the settlement of some point.
Lazim (Ar)	Usual, customary.
Lengkongan (Bandar)	Town or Village limits.
Mahkamah (Ar)	A Court.
.. jēnayat (Ar)	A Criminal Court.
.. mal (Ar)	A Civil Court.
.. khas (Ar)	A Special Court.
Mansokh (kan) (Ar)	(to) cancel or repeal.
Mēntri Bēsar	The Prime Minister.
Mēshkil (Ar)	Dissatisfied, especially of litigants.
Mēshuarat kērajaan	The State Council.
Milek (Ar)	To own property: <i>surat pindah milek</i> a transfer.
Mu'wakil (Ar)	Principal, client.
Nadzir Sekolah	The Superintendent of Education.
Pēchah amanah	Criminal breach of trust.
Pēguam	A lawyer.
Pējabat	An office, department.
Pēlateh	An apprentice, a cadet.
Pēlayan	A peon, orderly.
Pēnyata muatan kapal	A ship's manifest.
Pēratoran	Rules, regulations.
Pēsuroh Jaya	A State Commissioner, A senior District Officer.
Rampaian	Miscellaneous revenue: <i>hasil rampaian</i> .
Rang	A draft of a letter.
Rojo' (Ar)	(Return, reconciliation after divorce (W)): to refer to existing written authority: <i>saya rojo' ka-fasa! 8 pēratutan 9 tahun 1345</i> .
Ronchit	Miscellaneous, especially of expenditure. <i>Wang ronchit</i> petty cash.
Rondingan	A discussion, a conference.
Sharat (Ar)	A condition. <i>Di-sharatkan sabērti di-bawah ini</i> subject to the following conditions.

Shōr (Ar)	Advice, recommendation.
Surat mēshkilan	A petition, a notice of appeal in the Courts.
Tadbir (Ar)	superintendence: <i>yang di-bawah tadbir kēpala Pějabat Tanah.</i>
Tauliah (Ar)	A commission, a letter of appointment signed by H. H. the Sultan.
Tawakuf (Ar)	To postpone.
Timbalan	(1) A supporter to a recipient of an honour at an investiture. (2) An "assessor," sitting with a Judge or Magistrate.
Uzor (Ar)	ill, indisposed often conveying a similar nuance to our "not at home."
Wakil (Ar)	A pleader, a lawyer.
Wasil (kan) (Ar)	To endorse a licence.
Yuran (Ar)	A contribution or subscription.

A MILANO MUAS.

By E. V. ANDRIENI.

The following is a Milano Muas* which I had translated and which I have now put into English.

Long Kendi

The Gold House.

Raja Inu Bunga of Reji Kenadan Lanya Reji Bawai ordered his ministers and people to clean and prepare the palace because he has heard that Raja Bunga Mas of Kling is coming to visit him.

Bunga Mas Raja of Kling told his cousin Krabu Mas that he was going to visit Raja Inu Bunga to look for a princess and Krabu Mas was willing to go with him. Bunga Mas put on his iron shoes, trousers and coat (*i.e.* armour) and also his gold crown and his royal sword and took his silk umbrella spotted with gold. When they were dressed they started off walking on the water and after walking one and a half days and whilst they were in the middle of the sea Krabu Mas asked Bunga Mas whether he had brought his flying coat. He answered no but he asked from the middle of the sea his sister Dayang Chermin to take his flying coat from his room and throw it to him. When the flying coat reached him they both used it and reached the country of Raja Inu Bunga very high up. Medima Marak Bunga asked them where they came from and when he heard took them into the palace where they were welcomed by Raja Inu Bunga who seated them on golden chairs before a golden table on which was a gold sireh tray.

After they had taken of this, Raja Inu Bunga asked what was the purpose of the visit. Bunga Mas replied I have something to ask but I am afraid to ask you now but being pressed confessed that he wanted the hand of Princess Satimbang Mas.

Raja Inu Mas said my sister is affianced to Bakaran the King of the Upper Sky but if you are brave and strong you can take my sister. Bunga Mas replied I will do my best and fight Bakaran in order to keep your sister as my own.

When the princess was asked she too was willing to follow Bunga Mas but in order not to cause trouble she followed him to Kling for the marriage. Kling was distant five days and five nights.

Now Raja Bakaran had a dream that his sword was broken from its sarong and asked his mother the meaning of his dream. She replied it is a sign your fiancée has been taken by some one else. He then ordered the wizard to tell him who it was and the wizard said it is the prince of Kling who has taken her together with her silver tower.

* Folklore: songs of ancient heroes.

Then Raja Bakaran ordered his people to get ready and went to war. His warboat flew with him to Kling five days and five nights and called on Bunga Mas to come down in front of his palace but he refused.

Then Raja Bakaran said if you are a man come down and fight if a female give me back the princess.

His cousin ordered Bunga Mas to go down then Bunga Mas with all his swords came down and fought the army of Bakaran for three days and three nights until half of the army of Bakaran were killed and they beat the war drum and Bakaran himself came out of his war boat and pulled out his sword with thunder and lightning at this time.

He then fought with Bunga Mas and at last captured Bunga Mas and chained him to his war boat and in spite of entreaty from Krabu Mas refused to release him. Krabu Mas then sent three princesses Putri Bedakan, Dayang Pudi Awan and Putri Sadi-pan to entreat and he released him on condition that he would get him the Princess Norchaya for his wife, she being already affianced to Bedak Mas the adopted son of Raja Naga. Then Krabu Mas ordered Bakaran to go to Princess Norchaya's place which was a gold house in the upper lands near white clouds Bakaran went there and stayed with her.

Bedak Mas has a dream that his kris was broken and the wizard told him that Bakaran was with the princess in the gold house. Bakaran was furious and sent his cousin Ayer Mas to find out about it. Bakaran told him it was not by his own wish but by the orders of Krabu Mas. When Bedak Mas heard this he called out his people and went against Krabu Mas.

This war went on for two years when Bedak Mas called on Raja Naga his adopted father who was the most powerful king of the seas at this time and he sent his dragon army over to Kling to destroy.

Not long after this the sea rose high and flooded the country at the same time rain, lightning and thunder and most of the people were killed including Bunga Mas. At last the country became sea.

Bedak Mas returned to his country together with his father's dragon army.

NOTES ON TAMPANG.

By W. LINEHAN.

(PLATES IX—X)

Tampang was the term used for the tin coinage current in old Pahang. Tin was found in large quantities in Malaya from the earliest times and it was natural that a system of currency based on that metal should have been evolved.

The earliest known reference to a tin coinage is that of Chinese chroniclers writing at the beginning of the fifteenth Century¹ who record that "tin is found in the mountains in Malacca and the King has appointed officers to control the mines. People are sent to wash it, and after it has been melted it is cast into small blocks weighing one *kati* eight *tahil* or one *kati* four *tahil* official weight; ten pieces are bound together with rattan and form a small bundle while forty pieces make a large bundle. In all their transactions they use these pieces of tin² instead of money." We may suppose that *tampang* originated with these tin blocks. Plates IX and X fig. I show a solid *tampang*. The specimen is of the same weight as the smaller of the blocks described by the Chinese writer and may indeed have been one of these primitive coins. D'Albuquerque suppressed the Malay tin coinage current in Malacca when he conquered it in 1511.

The next mention of a tin coinage is that in the *Pelayeran* of Abdullah Munshi. He visited Pahang about 1837 and wrote "The system of currency in Pahang is, to my mind, inconvenient. Sixteen *tampang* are equivalent to one dollar. A *tampang* cannot be divided for instance into three-quarters, or a half or a quarter. If it is desired to buy anything however trifling a *tampang* must be paid for it. I asked Tengku Suleiman the son of the Bendahara whether the system of currency could not be altered. He laughed and said 'I often wished to change it but man-eating tigers made their appearance and fierce crocodiles were seen in the rivers, and for that reason no change was made: from its very beginnings Pahang has had the same system of currency,' I smiled and said nothing but attached no belief to the alleged portents."

The next reference to *tampang* is in 1889 after the establishment of the British Protectorate in Pahang when the Government on the 26th June 1889³ proclaimed that *tampang* were legal tender. In the proclamation it was stated that no further *tampang* would

¹ This information is obtained from the chapter on Mining in Dr. Winstedt's *Malaya*.

² presumably *tampang*.

³ Probably a nephew or some more distant relative of the Bendahara. Bendahara Ali who was then ruling had no son named Suleiman. Malays frequently describe themselves as *anak* (sons) when they are really of a more distant relationship

⁴ Resident's file No. 503 of 1889.

be minted. A further proclamation issued on the 28th November 1889¹ stated that *tampang* issued by the Sultan prior to the 1st July 1889 should be accepted as legal tender.

Tampang ceased to be legal tender in 1893 by which time the Pahang Treasury held *tampang* of the nominal value of \$1,125.00. The Treasurer in his report mentions that *tampang* were of three sizes the nominal value of the largest being four cents and of the two smaller sizes one cent. An assay of a sample of *tampang* was made about the same time by the Assayer of the Pahang Corporation. According to the assay the coins contained 86.75% of tin with a trace of zinc and iron, and 13.25% of scale (oxide of tin). The Assayer stated that the true value of any given weight of the coins could be put at about 85% of the current price of a corresponding quantity of tin.

From the records at my disposal I have not been able to ascertain what was the ultimate fate of the *tampang* called in by the Treasury and sent to Singapore. Sir William Maxwell then Colonial Secretary recorded his opinion that to Museums, Collectors etc., the coins would in time be worth more than their nominal value and that it would be a pity to destroy them.

It is interesting to note that in a catalogue of Malayan coins issued by Schulmann of Amsterdam a small *tampang* in good condition "square, with square protuberances; with arabesques and date 1281 A. H. = 1864 Pewter Hole on border" is priced at £0-12-6.

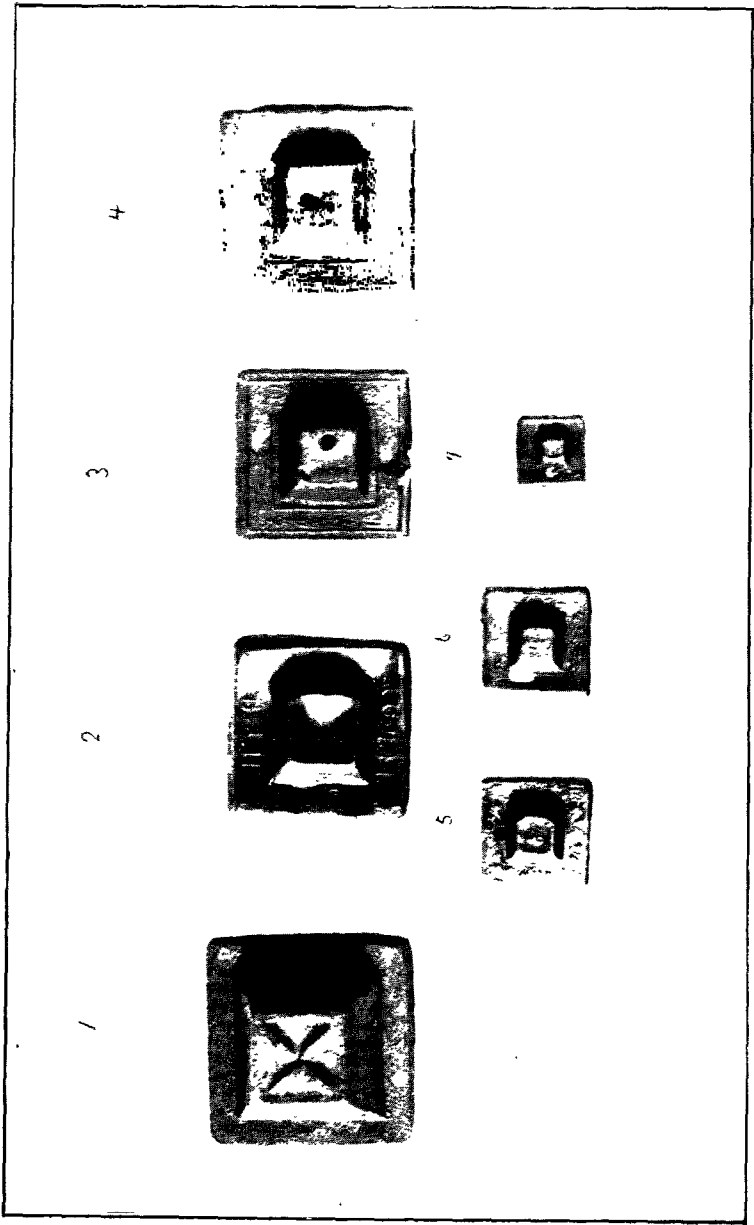
The solid *tampang* (pls. IX and X fig. 1) bears no inscription. As already mentioned it is probably an early form of this coinage.

The *tampang* shown on pl. IX fig. 2 and pl. X fig. 4 bears on the upper side of its base on one side the legend in Jawi *Malik-Al-Adil* "The Just Lord." A mistake in the mould resulted in the letters being inverted on the specimen. On the opposite side of the base also on the upper side is the date "1235" (1819 A.D.) I have three of these specimens in my possession all from the same mould. This *tampang* differs from later mintings in that (amongst other things) the inscription is on the upper side, that it is very imperfectly hollowed out and that its crown is depressed.

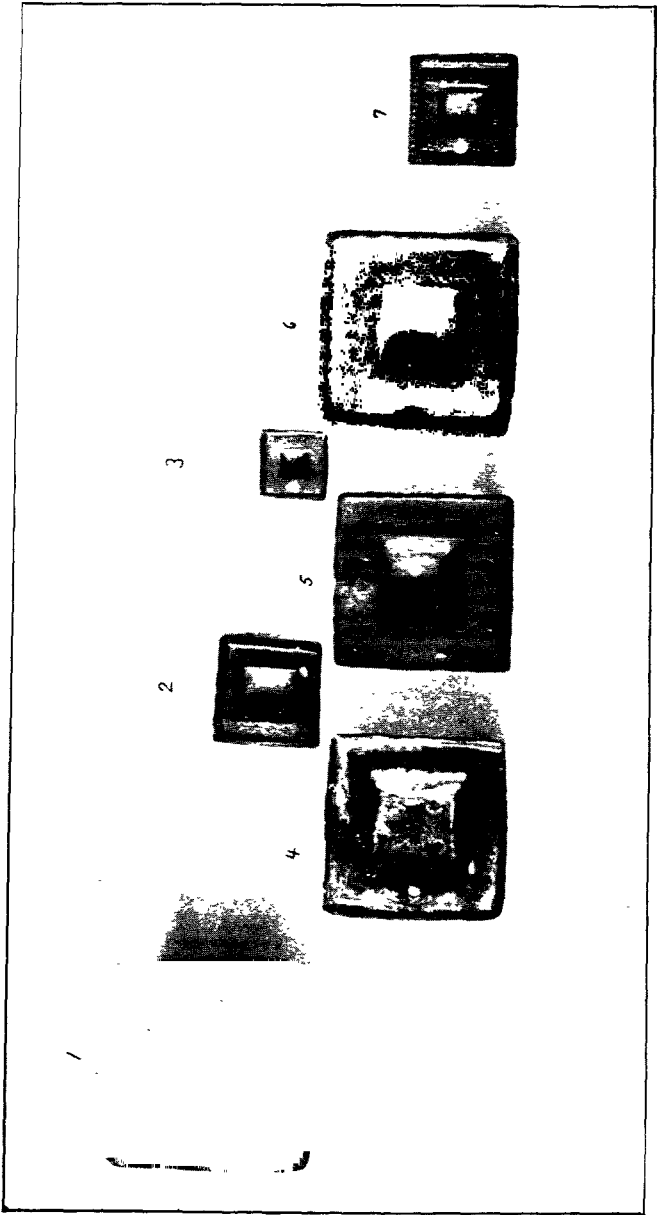
The *tampang* shown on pl. IX fig. 5 and pl. X fig. 7 is inscribed "*Sarafi Pahang Sanat 1264*" "minted in Pahang, date 1264" (1847 A.D.). This, so far as I am aware, is the earliest of the one cent pieces. The specimen would seem to have been struck from a mould now in the possession of the F.M.S. Museums² Pl. IX fig. 3 and pl. X fig. 5 show a four cent *tampang* inscribed in Jawi: "*ini (blan) ja Pahang dari tarikh Sanat 127(8?) pada awa (1) bulan Rabi-al-thani*" "this is coinage of Pahang,

¹Resident's file 1448 of 1889.

²vide "Notes on old Malay Tin Coins and Coin moulds" by Mr. I. H. N. Evans F M S Museums Journal Volume XII part 4.



Linchan: Tampang (tin coinage) from Pahang.



Lanchan: Tampang (tin coinage) from Pattang.

date 1271 (1281?), in the beginning of the month Rabi-al-thani." 1271 (1281?) A.H. corresponds with the year 1854 (1864?) A.D.

The one-cent *tampang* illustrated on Pl. IX fig. 6 and Pl. X 2 bears the inscription "(Sera)fi Pahang Sanat 1264(?)" (figures inverted) "minted in Pahang, date 1264" (1847 A.D.). This is from a mould different from the specimen of the same date described above and is not nearly so well finished.

Fig. 4 Pl. IX and fig. 6 Pl. X show a four-cent *tampang* minted by a Chinese and inscribed "Sung(ei) Belat punya.... Sanat.....(illegible) Seraffi (?) Pahang" "of the river Belat.....date.....minted in (?) Pahang."

I have in my possession several-specimens of the smallest type of one cent *tampang* (Pl. IX fig. 7 and Pl. X fig. 3) inscribed "Malik-Al-Adil, tarikh kapada Zul-kaedah Sanat (?)" (date illegible). The half dozen specimens in my possession seem to come from one mould. In all of them amongst other similarities the figures recording the date are blurred.

THE PĒNGKALAN KĒMPAS "SAINT."

By R. J. WILKINSON, C.M.G.

The monuments at Pĕngkalan Kĕmpas were the subject of a complete number of the *Journal of the Federated Malay States Museums*—Vol. IX, pt. 3, of 1921. In closing his article on the epitaph Mr. C. Boden Kloss wrote:—

These notes are written merely "to start the hare" and introduce the plates which it is hoped may meet the eye of some one capable of deciphering the inscriptions. Mr. Kloss's hare was run to earth in October, 1927, by Dr. P. V. van Stein Callenfels who deciphered the inscriptions (op. cit. XII, pt. 4, of 1927), but started a new hare by leaving it to others "to get some more information about the saintly rascal who is buried under it."

Attention was first drawn in print to this inscription by me; but credit for its discovery really belongs to the F.M.S. Museums Department from whom I had learnt of it. It would seem, however, that Shaikh Ahmad's reputation has suffered from the publicity given him; and it is due to him that he should be defended from the charge of being a "saintly rascal." He may have been a martyr.

The epitaph gives us only the official version of what happened. It tells us that Shaikh Ahmad came down river—from Sungai Ujong (or Sening Ujong as it was then called)—with a number of associates and followers "for some treacherous purpose" (*bĕrbuat daya*). All of them came to "a miserable end." This was in A.D. 1467 "when the family of Tun Barah Galang governed the country."

From this inscription we may fairly infer certain things. "The family of Tun Barah Galang" must have ceased to govern the country when the stone was put up. The Shaikh and his followers were not in overt rebellion; they were planning evil or suspected of it. The country was Sungai Ujong, not Malacca: we know from the *Annals* that it was governed at that time as a fief by the *bĕndahara*'s household. "Tun Barah Galang" would be a *bĕndahara*. He may have been the then *bĕndahara*, "Tun Perak of Klang." He may have been any *bĕndahara*; *pra-klang* is the Indo-China word for "lord of the Treasury." But, historically, it must have been some *bĕndahara*. And it is true, as the inscription also suggests, that the family of Tun Perak of Klang ceased to govern Sungai Ujong after this incident.

Tun Barah Galang is obviously the "Batin Mergalang" in Father Borie's account of the Mantras in "Essays relating to Indo-China," second series, vol. i. p. 289. Much that is fabulous is there related about him. But he is associated in the legend with Malacca and was the protector of the Mantra—as a *bĕndahara* overlord would naturally be. And the title *tun* given him in the inscription is also that of the *bĕndahara*'s house.

We now come to a curious passage in the Malay Annals about an incident—almost certainly this incident—that occurred in the middle portion of Sultan Mansur's reign or about 1467 A.D.

" The Sultan bestowed Sening Ujong as an undivided fief upon the Dato' Sri Nara Diraja. Up to that time the Dato' had only shared it with the *běndahara*. It had been administered by a *pěnghulu*, Tun Tukul, who was guilty of some minor offence and was put to death by Mansur Shah. As a result of this the Sening Ujong people would not come out of their country any more."

Obviously this is not the whole truth.

Why was the *běndahara*—the most powerful noble in Malacca—punished for Tun Tukul's " minor offence " by the confiscation of a valuable fief? And why did the Proto-Malays take to the jungle as a result of what was done? May we not conjecture that the primitive Proto-Malays of the Sungai Ujong of 1467 A.D. had grievances—probably well-founded—against the local administration; that Shaikh Ahmad was their spokesman; and that they came down river to make their complaints. They were treated as rioters and rebels and came to a miserable end. But the action of the authorities was not pleasing to Mansur Shah. He put to death the local officer in charge, Tun Tukul; and he deprived the feudal Chief, Tun Perak, of all his authority in Sungai Ujong. Still, the unfortunate *rayat* had been terrified by the fate of their leaders; and could not be induced to resume any trade.

Reference has been made to two more persons; Tun Tukul and the Dato' Sri Nara Diraja. Tun Tukul is still remembered in Sungai Ujong tradition (see my Sungai Ujong article in the Journal of the S.B., R.A.S., 83, 1921, p. 124); and Shaikh Ahmad is referred to on the same page. But all about them is myth. The Dato' Sri Nara Diraja had been *běndahara* and had retired in favour of Tun Perak of Klang. That will explain the two Chiefs sharing the revenues of the fief; it may have been part of the amicable arrangement made at the retirement.

A JELEBU CUSTOMARY SAYING.

By R. O. WINSTEDT.

"A wide association with colours," says Perry in "The Children of the Sun" (p. 325), "is characteristic of the moieties of the dual organization, and the superior side of the community is invariably connected with the lighter colour. . . . The colour of Upper Egypt was white, while that of Lower Egypt was red: in India the Bhil divisions are white and black; some Nair clans are divided into white and black divisions; in Malanesia the dual divisions are connected with light and dark colours." Whatever one may think of this "dual organization" of the diffusionist school, in Malay kingdoms the royal colour is white or yellow, the colour of the non-royal Bendaharas black. The rulers of Pahang were the Bendaharas of the Sultans of Johore until the British sanctioned their elevation to a Sultanate. So the original Pahang flag was black (JRASSB. No. 75, pp. 3, 4). The flag of the Bendahara of Perak is black, and the modern Perak tricolour has white for the Sultan, yellow for the Raja Muda (or Crown Prince) and black for the Bendahara.

In the customary sayings of Rembau, a Negri Sembilan colony from Minangkabau, (apparently two kinds of) crows from the hills symbolize (apparently two) aboriginal tribes and a white egret typifies a settler from over the sea:—"the black crow and the ant-like crow came from the hills on four feet, the white egret came from oversea on flapping wings." (JRASSB. No. 56, P.2). Like the metaphors of their other customary sayings, this evidently came from Minangkabau and was adapted to local history. In the sayings of Jelebu, another Minangkabau colony, there are the lines:—

Crows were white and black were egrets

When to earth a prince fell standing

(*ib.* pp. 8, 9).

Again in the laws of Moko-Moko it is laid down that when the Raja "calls a crow (*dendang*) white, it is white, and when he calls white black, it is black." (*Miscellanies* II, Sumatran Mission Press, Bencoolen, *Undang-Undang of Moco-Moco* p. 6). May one venture to see in these sayings a reference to Hindu princes breaking down matrilineal rules based on totemic clans. Certainly by the matriarchal law of Minangkabau if a (white) prince married a (black) commoner (such as the daughter of a Bendahara), the children would be (black) commoners of their mother's clan, but by the law of the Hindu princes they were (white and) royal and of their father's house. The Jelebu saying would then mean: "Those we now call commoners were royal and those we now call royal were commoners, when our first foreign ruler arrived." One thing certain is that these *adat* sayings are never verbiage but always have a precise meaning—whether in the present instance the meaning has been solved or not. Anthropologists may yet define the two species of aboriginal crow.

TOKIN.

By R. O. WINSTEDT.

“Johore has among the insignia of its rulers a peculiar iron rod three feet long, decorated with a brass ring and called a *tokin*” (Johore by J. E. Nathan and R. O. Winstedt, 1920).

I have never heard the word elsewhere in Malaya but its history is written by Dr. J. Imbelloni, an Argentine professor, in Father Schmidt's Festschrift, Vienna 1928, pp. 324-335. In various forms *to'i*, *toki* it occurs in Polynesia, Melanesia, Micronesia, Chile, Patagonia and other parts of South America. Everywhere the word has the same shades of meaning:—(a) stone weapon, stone axe, stone implement, (b) symbol of dignity and power, (c) the hereditary or invested chief who exercises power, (d) a ritual object employed mostly at declarations of war and peace. In Chile the form *tokin*== “to rule, command.” The Professor suggests the word in some of its forms may be connected with the Red Indian “tomahawk” and invites attention to the phrases “take up the hatchet” “bury the hatchet.”

In Johol one may expect an aboriginal origin for the word but I have not found it:—in Perak the word descriptive of the sword or creese given to commoner chiefs on installation is the Sakai word *baur*==‘staff.’ Anyhow here is a Malayo-Polynesian word whose history extends now from the continent of Asia to South America; a word that is part of the evidence for Oceanic influence on South America in days before Christopher Columbus.

HABIS, BUKAN.

By R. O. WINSTEDT.

In the lexicographical notes to his recent masterly paper on 'Les Inscriptions Malaises de Crivijaya,' M. Coedes discusses a word *paravis* that occurs in three of the old Malay inscriptions, and in so doing draws attention to a meaning of the word *habis*, to which Malay lexicographers (myself included) have hardly given sufficient attention.

Dr. Bosch and M. Coedès independently reached the conclusion that *paravis*='altogether, all.' Prof. van Ronkel suggests a connection between *paravis* and the modern Malay *perawis* 'factors, constituents,' and M. Coedès adds that *péravis* may be derived from *habis* "not in its actual acceptation of 'end, ended' but in that of the Cham word *abih* which means not only 'ended, to cease,' but also, 'all, altogether,'" and he points out that in Indo-Chinese languages like Khmer and Siamese the same word denotes achievement and totality.

Wilkinson's Dictionary and my own give 'entirely' as one of the meanings of *habis* and Wilkinson gives two examples where *habis* clearly means 'entirely, all,' viz: *Badan pun habis-lah luka* 'all his body was hurt' and *Habis-lah pohon-pohon nyior mereka itu sakalian-nya di-tebang-nya* 'all the coconut-palms of those folk, the whole lot of them, were felled.'

Other literary examples are:—

Di-makan-nya oleh Badang muntah hantu itu habis semua-nya ("The Malay Annals")—"Badang ate the ghost's vomit, all of it in its entirety."

Segala senjata Maharaja Boma pun habis-lah di-terbangkan oleh angin taufan itu (Hikayat Sang Sambah) 'all the weapons of Maharaja Boma were the whole lot of them carried off by that storm.

Colloquial examples are:—

Orang-orang rumah itu habis belaka pergi 'the folk in that house all of them, the whole lot, went.'

Mengapa kau-berikan habis-habis? Kita apa 'nak makan 'why did you give all of it? what are we to eat?'

It will be noted how often in these contexts *habis* is associated with words denoting all, altogether. *segala*, *semua*, *belaka*.

M. Coedès in a note on another archaic word *vukan* in these inscriptions translates it 'other' = Cham *bukan* and quotes the analysis of the Malay negative *bukan* from my 'Malay Grammar' p. 135 to show how the nuance 'other' may be detected in its modern Malay meaning.

I have to thank Che Zainal-abidin of the Sultan Idris College for most of the above examples of the use of *habis*.

NOTE ON KELANTAN REJANG.

By ANKER RENTSE.

Perjalanan Rejang.

Told by Nik Man, Kota Bharu, Kelantan. Nik Man is a tukang lakong wayang kulit (guru) in Tengku Temenggong's Kampong at Kota Bharu.

Satu hari bulan rejang kuda. Pada hari itu barang pekerjaan baik, jika berlayar baik.

Dua hari bulan rejang kijang. Pada hari itu pekerjaan apa-apa baik.

Tiga hari bu'an rejang harimau. Jika beranak pada itu hari, derhaka kepada ibu bapa. Jika sakit, lambat semboh.

Ampat hari bulan rejang kuching. Pada hari itu jika beranak, terlalu baik, mudah menchari rezeki. Jika pergi berburu di-hutan, hendak boleh perburuan. Jika berkahwin hari itu, terlalu baik.

Lima hari bulan rejang sipa. Jika beranak pada hari itu, tiada baik, derhaka-lah pada Allah dan pada ibu bapa. Pada hari itu barang' kerjaan tidak baik.

Anam hari bulan rejang kerbau. Pada hari itu, jika barang pekerjaan baik. Jika bertanam pun, baik. Jika menurun benih pun, baik. Jika beranak pada hari itu pun, baik, kaseh kepada ibu bapa.

Tujuh hari bulan rejang tikus. Jika harta hilang pada hari itu boleh balik.

Delapan hari bulan rejang lembu. Jika beranak pada hari itu baik mudah rezki. Jika harta hilang, dapat balek harta itu.

Sembilan hari bulan rejang anjing. Jika beranak hari itu tidak baik itu anak-nya. Jika berbuat barang pekerjaan apa-apa pun, tidak baik.

Sapuluh hari bulan rejang nagá. Pada hari itu pekerjaan baik. Jika kahwin pun, baik. Jika beranak pun, baik. Jika menurun benih pun, baik juga.

Sabelas hari bulan rejang kambing. Jika pada hari itu, pertengahan; baik pun tidak, jahat pun tidak.

Dua-belas hari bulan rejang mayang. Jika beranak pada hari itu, chantek rupa-nya. Jika berkahwin pun, baik. Jika hendak berjalan jauh pun, baik juga.

Tiga-belas hari bulan rejang gajah. Jika bertanam pada hari itu, tidak baik, daun di-makan hulat. Jika sakit, payah hilang.

Ampat-belas hari bu'an rejang singa. Pada hari itu barang pekerjaan baik dan berkahwin baik dan beranak baik lagi mudah rezki.

Lima-belas hari bulan rejang ikan. Pada hari itu terlalu baik. Jika berkahwin, baik. Jika beranak pun, baik. Jika berdagang, banyak laba. Jika bertanam, terlalu baik.

Anam-belas hari bulan rejang babi. Jika beranak pada hari itu, tidak baik budi, dan barang pekerjaan tidak baik.

Tujuh-belas hari bulan rejang enggang. Pada hari itu baik barang pekerjaan apa-apa.

Delapan-belas hari bulan rejang lipan. Pada hari itu kurang baik. Jika berjalan, tidak baik. Jika bertanam, tidak baik. Jika berbuat rumah hari itu, menjadi baik, tidak apa.

Sembilan-belas hari bulan rejang batang. Pada hari itu berkahwin baik. Jika berjalan tidak baik. Jika pekerjaan berjual beli tidak baik.

Dua-puluh hari bulan rejang hantu. Jika beranak pada hari itu, baik lagi kaya. Jika pekerjaan lain, tidak baik.

Dua-puluh satu hari bulan rejang gugak. Pada hari itu barang pekerjaan tidak baik. Jika bertanam pun tidak baik.

Dua-puluh dua hari bulan rejang daun. Pada hari ini baik. Jika berkahwin baik, jika beranak baik.

Dua-puluh tiga hari bulan rejang lang laut. Pada hari itu baik dan berkahwin baik dan beranak baik dan berlayar baik.

Dua-puluh empat hari bulan rejang padi. Pada hari itu jika beranak tidak baik. Jika berkahwin baik. Jika harta hilang boleh balek.

Dua-puluh lima hari bulan rejang pasap (jahat). Pada hari itu jangan berbuat pekerjaan apa-apa. Jika beranak pada hari itu, terlalu jahat, lagi penchuri itu anak.

Dua-puluh anam hari bulan rejang brunai. Pada hari itu jika bertanam tidak baik dan berjalan kamana-mana tidak baik.

Dua-puluh tujuh hari bulan rejang bayang. Pada hari itu jika beranak baik. Jika bertanam baik. Jika berlayar baik, jika berkahwin baik.

Dua-puluh delapan hari bulan rejang pati. Pada hari itu barang pekerjaan apa-apa baik pertengahan sahaja.

Dua-puluh sembilan hari bulan rejang hulat. Pada hari itu beranak baik akan tetapi ada penyakit sedikit pada budak itu. Jika berkahwin terlalu baik serta selamat-nya.

Tiga-puluh hari bulan rejang panah Ranjuna. Pada hari itu jika berjalan jauh tidak baik. Jika berlayar tidak baik. Jika bertanam baik. Jika beranak tidak baik pada hari itu. Jika sakit pada hari itu lambat sembuh ada-nya.

Nik Man wrote the above from an old book written by his grandfather, Nik Wan Hamad, who used to be a sort of secretary (according to Nik Man's statement) for the late Sultan Muhammad IV of Kelantan.

TWO FOLKTALES OF KELANTAN.

By ANKER RENTSE.

In 1926 there was a big flood in Kelantan which caused a considerable damage to the whole country, and the "orang tua" declared, that to their knowledge such a disaster had never happened to the country before except for the "angin besar" about fifty years ago.

In this connection it may be of interest to call attention to W. Skeat's: *Fables and Folktales of an Eastern Forest* (Cambridge University Press, 1901), pag. 62, which reads as follows:—

A Malayan Deluge.

In the beginning the country of Kelantan contained eighteen hundred souls. But one day a great Feast was made for a Circumcision, and all manner of beasts were pitted to fight against each other. There were fights between elephants and fight between buffaloes and fights between bullocks and fights between goats, and at last there were fights between dogs and cats.

And when the fights took place between dogs and cats a great flood came down from the mountains, and overwhelmed the people that dwelt in the plains. And they were all drowned in that flood, save only some two or three menials who had been sent up into the hills to collect firewood.

Then the sun, moon and stars were extinguished, and there was a great darkness. And when light returned, there was no land but a great sea, and all the habitations of man had been overwhelmed.

Another version of the same tale was told me one evening in Kota Bharu by Tengku Khalid's Bedari, Che Ahamad. Here the fights between dogs and cats did not, however, cause a flood, but some other catastrophe probably an earthquake. Che Ahamad's story runs as follows:—

Gunong Noring.

Some hundred years ago the Gunong Noring mountain was not to be found in Kelantan but far away in Perak. At that time it happened that a chief invited all the inhabitants of Kelantan to join in a great feast on account of the circumcision of his son. The whole population of Kelantan with the exception of one accepted the invitation. The one who remained at home was a pregnant woman expecting her confinement. At the festival place people amused themselves by fighting matches between animals. Bulls fought bulls and cocks fought cocks and elephants fought elephants and so on. But suddenly someone started fights between dogs and cats at which Tuan Allah got very angry against the people, he lifted the big Gunong Noring in Perak and threw it into Kelantan where it killed all the people at the festival without exception. After this there remained only the pregnant woman in the whole country and she gave birth to a child.

If one goes up into the jungle to a place called Tadoh near Gunong Noring, one will find that all the coconut palms are still bent forward by the pressure of Gunong Noring. On the top of the mountain used to be a "berhala," a horseman on his mounted horse, looking West towards the sunset. If anybody passed in front of him the effect of his poisonous breath was so powerful that they vomited. To avoid this the medicinemen made a "main peteri" seance which lasted seven days and seven nights. A pink buffalo was killed and offered to the spirits, who in return assisted in calling the horseman away from the mountain top. He disappeared into the mountain, where he still remains; but on the top of Gunong Noring one can see the white marble rock, he rested on.

KELANTAN NAMES FOR BULLOCKS ACCORDING TO THEIR COLOUR.

By ANKER RENTSE

Fasal ini menyatakan warna lembu.

1. Jika ada lembu itu warna kuning, tandok kuning dan mata kuning dan hidong kuning dan kuku kuning dan ekor kuning, *kerubeng mas* nama-nya.

2. Jika ada lembu warna merah dan tandok merah dan mata merah dan kuku merah dan ekor merah, maka lembu itu *kijang* nama-nya.

3. Jika ada lembu warna merah muda dan tandok merah muda dan mata merah muda dan hidong merah muda dan kuku merah muda dan ekor merah muda, maka lembu itu *kijang muda* nama-nya.

4. Jika ada lembu warna tuboh merah dan tandok merah dan mata merah dan di-atas muka-nya putih sampaikan hidong dan ekor pun putih, maka lembu itu *kerubeng lang* nama-nya.

5. Jika ada lembu itu tuboh-nya merah dan tandok merah dan hidong-nya hitam dan ekor pun hitam, maka lembu itu *kerubeng kundang* nama-nya.

6. Jika ada lembu itu tuboh putih dan tandok putih dan tandok putih dan mata putih dan hidong putih dan kuku putih dan lidah putih dan ekor putih, maka lembu itu *kerubeng buwis* = *bueh* nama-nya.

7. Jika ada lembu itu warna tuboh putih dan ekor hitam, maka lembu itu *kerubeng* nama-nya.

8. Jika ada lembu itu sa-tengah-nya merah di-hadapan-nya hitam dan kaki keempat-nya putih dan lidah-nya putih dan hidong putih dan punggung-nya hitam, maka lembu itu *lasat* nama-nya.

9. Jika ada lembu itu tuboh-nya hitam dan likongan mata-nya putih dan di-atas muchong hidong putih, maka lembu itu *jebat* nama-nya.

10. Jika ada lembu itu di-tengah-tengah merah dan hadapan hitam dan punggung hitam, maka lembu itu *buah tal* nama-nya.

11. Jika ada lembu itu tuboh hitam dan di-atas tulang belakang merah dan papan punggung pun merah, maka lembu itu *laka darah* nama-nya.

12. Jika ada lembu itu tuboh hitam muda dan dada-nya merah dan dalam telinga-nya merah, maka lembu itu *laka buah* nama-nya.

13. Jika ada lembu itu tuboh merah muda dan di-atas belakang-nya kuning, maka lembu itu *laka timbang* nama-nya.

14. Jika ada lembu itu tuboh-nya hitam dan di perut-nya merah muda dan atas belakang merah muda juga dan di-dalam telinga merah muda dan papan punggung merah muda, maka lembu itu *laka batu* nama-nya.

15. Jika ada lembu tuboh merah berchampur hitam kesemua-nya, maka lembu itu *tudu sela* nama-nya.

16. Jika ada lembu itu kulit-nya hitam dan bulu-nya kelabu, maka lembu itu *kulat bulu* nama-nya.

17. Jika ada lembu itu kulit-nya hitam dan bulu hitam berchampur merah, maka lembu itu *kerubeng besi* nama-nya.

18. Jika ada lembu itu kulit merah berchampur kuning dan bulu-nya hitam berchampur merah, maka lembu itu *kerubeng belachang* nama-nya.

19. Jika ada lembu itu kulit hitam dan bulu-nya kelabu dan bulu tengkot-nya hitam sadikit, maka lembu itu *kabol* nama-nya.

20. Jika ada lembu itu warna-nya hitam bertampon-tampon puteh, maka lembu itu *aral* nama-nya.

21. Jika ada lembu itu kulit hitam bulu hitam kesemua dan ayer kinching hitam, maka lembu itu *kumbang* nama-nya.

22. Jika ada lembu itu kulit hitam bulu-nya kuning muda dan tandok-nya hitam dan kuku hitam dan mata hitam, maka lembu itu *kumbang besi* nama-nya.

23. Jika ada lembu itu kulit merah bulu kuning muda dan tandok merah dan mata merah dan kuku merah, maka lembu itu *lasat besi* nama-nya.

24. Jika ada lembu itu kulit merah bertahi lalat dan tandok merah dan mata merah dan kuku merah. maka lembu itu *kerubeng kurat* nama-nya.

25. Jika ada lembu warna apa-apa sa-kali pun, jika ada di-bawah perut puteh hingga sampai ka-batu pelir, maka lembu itu *kerubeng upes* nama-nya.

26. Jika ada lembu bangsa lasat, mata hendak sempit dan tandok pepeh dan gigi hitam satu putong atau dua putong dan di-langit dalam mulut-nya tapong hitam sadikit, maka lembu itu-lah *lasat bertuah* nama-nya.

27. Jikalau ada lembu itu kulit hitam bulu pun hitam kesemua, maka dudok jauh kita nampak hitam berminyak lembu itu, maka nama-nya lembu itu *jebat kelawar*.

28. Jika ada lembu warna hitam kesemua akan tetapi atas kepala berhubung puteh, maka lembu itu *jebat lubang* (uban) nama-nya.

29. Jika ada lembu semua tuboh-nya hitam akan tetapi kesemua tuboh ada berhubung puteh sadikit-sadikit, maka lembu itu *jebat menjarum* nama-nya.

30. Jika ada lembu itu tengkok-nya hitam dan dahi kuning dan punggung hitam dan di-tengah hitam berchampur merah, maka lembu itu *buah tal lelaba lutong* nama-nya.

31. Jika ada lembu tengkok hitam dan punggung hitam dan di-tengah merah berchampur hitam dan di-atas belakang merah sampai ka-punggong panjang saperti ular lidi, maka lembu itu *limau manis* nama-nya.

32. Jika ada lembu itu di-hadapan hitam dan punggung hitam dan di-tengah tuboh-nya kuning berchampur hitam dan kulit di-chelah-chelah batu pelir-nya merah dan dada merah dan bibir mulut-nya merah, maka lembu itu *laka beruan* nama-nya.

33. Jika ada lembu itu kulit-nya merah dan bulu kelabu kuning dan ada bertampong merah dan bertampong kuning dan bertampong hitam sadikit-sadikit, maka lembu itu *laka tilang* nama-nya.

34. Jika ada lembu warna macham-macham sa-kali pun, jika ada puteh besar tapak tangan dudok di-kelaparan-nya, maka lembu itu sangat-sangat bertuah-nya. Maka lembu itu *tampon bertuah* nama-nya.

The above is an extract of notes written down in Kelantanese (Jawi) years ago by the grandfather of Nik Man, teacher, Kampong Tengku Temenggong, Kota Baharu. Some of the words I have been unable to trace in dictionaries available here and the spelling might be wrong.

R. J. Wilkinson's "Papers on Malay Subjects," Life and Customs. Part II, pag. 71, (Kuala Lumpur, 1909), gives an account from Nègri Sembilan of water-buffaloes somewhat similar to the above.

Reference has also been made to "Kelantan Bull-Fighting" by C. C. Brown (J.M.B.R.A.S.) VI, 1928, p. 74.

MALAY CHARMS, KELANTAN.

Collected by ANKER RENTSE.

1. *Ilmu pënjauh Harimau*, charm for keeping away tigers; communicated by To' Bedari, a medicine-man (*hala*), a Pangan of the Jeher (?) tribe in the jungle of Sungai Sokor. He is much in touch with Malays, who occasionally use him as a *Bomor*.

Hai Berma Sakti,	Ho! mighty Brahma,
Raja dari bumi!	Lord of the earth,
Mu bawa undor kucing,	Take away thy cat!
Jangan beri rosak binasa kapada	Harm not nor destroy my body!
tuboh aku	May my teacher be potent to free
Sidi guru, sidi lepas!	me.
Hai Ali gagah! Ali kuasa!	Ho! mighty and powerful Ali!
Sidi guru! Sidi Lerkat!	Bow low and love me
Mu tundok rendah,	Have love and affection for me!
Berkaseh sayang dengan aku,	May my teacher be potent.
Rindu daripada aku,	
Berkaseh sayang kapada aku!	
Sidi guru, sidi tertegoh (?) !	

2. *Ilmu berjalan di-hutan*, charm for jungle journeys; from To' Bédari.

Hai jin hutan, jemba'ang hutan,	Genies of the forest,
Jangan beri rosak binasa kapada	Gnomes of the forest!
badan aku!	Harm not nor hurt my body!
Sidi guru, sidi lepas!	May my teacher be potent to free
Wah daripada badan aku!	me (from evil)!
Aku nak lepas sakalian badan	Away from my body!
aku!	I would free all my body.
Hai mak lembek, mak lanjut.	Mother with the long limp breasts
Hilir baning penghulu raja dari	Royal chieftainness of the earth to
bumi,	the north,
Nak me(m)lepas daripada	I pray thee let my life go free.
nyawa aku.	

NOTE.- *Hilir baning* means: North in Kelantan Dialect. Another informant says that *Hilir besawan* means North and *Hulu baning* means South.

3. *Ilmu pengaseh*, a love charm from To' Bedari.

Hai Baya(?ng) Muhammad,	Shadow of the Prophet!
Mu mari mu kaseh sayang kapada	Come and cherish the glory of my
da seri muka aku.	countenance.
Mu mari bawa roh semangat	Come and bring me the spirit of
kapada aku,	life.

Mari bersama-sama terdengau aku	Come and be with me,
Mu tundok rendah kapada bawah tapak kaki aku,	Bow low beneath the soles of my feet.
Burong bujak (?) terkaseh di- muka aku,	- - - -
Angin berhenti seri muka aku,	May the winds halt before the glory of my countenance.
Sidi guru, sidi berkat.	May my teacher be potent and blessed.

4. *Ilmu pēngaseh*, a love charm from Che Poh, Kuala Nal, Ulu Kelantan.

A san to' di' dol!

Get hold of the girl's ringfinger on the right hand, squeeze it and perform the charm.

5. *Ilmu makan sireh*, a charm for betel-chewing, from Dollah, Batu 29, Jalan Kuala Krai, Kelantan.

Si-kuning, pinang pun kuning,	Golden one and golden areca-nut!
Pinang sedekah di-rimok (?)	- - - -
Mulut manis, mamah pun kun- ing!	Sweet of mouth, with golden quid! What heart would not be mad for you?
Hati mana ta' gila?	
Sidi guru, sidi-lah aku,	May I and my teacher be potent
Kata berkat la-ilaha ila'llah.	By virtue of the blessed words, "There is no god but god."

If the man meets the girl he is longing for, he whispers this charm and the girl will take notice of him.

The second line is obscure.

6. *Ilmu Wayang Kulit*, a charm for the shadow-play, from Wan Hamad, To' Dalam Wayang Kulit, Pasir Puteh District, Kelantan.

As-salam alaikum!	Peace be upon you.
Aku nak kerah jaga 'bal empat malaikat	I would muster the captains of the four archangels
Jibrail, Mikail, Azrail, Azrafil,	Gabrael, Michael, Azrail, Izrafil;
Omar, Usman, Ali, Abubakar,	Omar, Usman, Ali and Abubakar.
Jaga menjadi pagar sawah,	Guard and be the fence of my
Jaga menjadi sasak serandak,	fields;
Jaga menjadi kebun lekok,	Guard and be my wattled protec- tion
Jaga di-kiri, jaga di-kanan,	Guard and be my sunk garden (?)
	Guard me on right and left
	Guard me afore and behind,

Jaga di-belakang, jaga dapan,
Jaga di-atas, jaga di-bawah. Guard me above and below.

This charm is performed by To' Dalam before the play starts, in order to avoid evil influences.—'bal=*hulubalang*.

7. *Ilmu pengaseh*, a love-charm from Dollah, Batu 29, Jalan Kuala Krai, Kelantan.

Boh Boh! bunga teratai,	A lotus lily!
Bunga raya dalam talam,	A hibiscus-flower on a tray.
Pakai kain tepi serbai	Though I wear a tattered skirt
Naik cahaya muka aku.	Light shines on my countenance.

When the man meets the girl he likes, this charm will help him, even if he wears a dirty old skirt to look like a prince.

8. *Ilmu pengaseh*, a love-charm from Dollah.

a. As-salam alaikum Nabi Elias.	Greeting to thee, Prophet Elias
Aku nak ambil ubat pengaseh,	I want a love-potion,
Nabi Elias.	Prophet Elias!

He cuts his finger and mixes the love medicine with a drop of his blood. The medicine is *ubat chenduai* made by the Semangs.

b. As-salam alaikum Nabi Elias.	Greeting to thee, Prophet Elias!
Nak ambil ubat pengaseh,	I would take a love-potion.
Naik chomoh daripada si-anu.	

When he meets the girl he rubs one drop of love medicine secretly on her hands, arms or body, after which she is supposed to fall in love with him.

9. *Ilmu pengaseh*, a love-charm called Ilmu Seri Rama, the charm of Sri Rama; collected from To' Dalam Wan Hamad, a shadow-play performer from Pasir Puteh District.

Hai Seri Rama,	Sri Rama!
Aku tahu kena(1) asal-mu,	I know your origin.
Ibu-mu burok (?) Raja Burong,	Your mother was (?) Queen of the
Bapa-mu Nabi Muhammad,	Birds
Dengar-dengar pesanan aku,	Your father the Prophet Muham-
Mu membawa gila s'bara dari	mad!
badan si-anu,	Hear and hearken to my instruc-
	tions.
	Make my love mad for me,
	Mad and distracted for love of me.

Gila s'bara dari aku,
Mabok bengong dari aku.

Seri Rama before he descended to earth was Vishnu who rode on the Geruda somewhere above (*sténga antara*)

Wan Hamad takes the figure of Seri Rama from his shadow-play, wets his finger by moisture from his throat and places the wet finger on Seri Rama, at the same time that he whispers the charm.

kena—*kenal*.

s'bara might possibly mean "of the same heat."

burok is uncertain: is it the *borak* of Islamic legend?

10. *Ilmu Wayang-kulit*, a shadow-play charm called Ilmu Pak Dogah (=Semar); from To' Dalam Wan Hamad.

<p>Wujih Semar bom b'smis (?) Wallah nama aku, Semar 'ku nama Semar, Berkat Semar, Turun daripada Inoh, Berkat Inoh, Turun daripada Galus, Berkat Galus, Turun daripada Gajah Madah, Hai Semar, Baharu batu kuning (?) Hai Semar, Baharu batu hitam, (?) Hai t'maroh tan t'maroh.</p>	<p>Semar is the most powerful spirit in the world. He plays his part in the <i>Kelantan Wayang-kulit</i> as the clown Pak Dogah. Inoh and Galus are yellow Jins or Dewas.</p> <p>The charm in its present form is untranslatable.</p> <p>For the word <i>tan</i> see p. 90 of C. C. Brown's "Kelantan Malay."</p>
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11. *Ilmu pengaseh*, a love-charm called Ilmu Hanuman; collected from To' Dalam Wan Hamad.

<p>Hai Raja Hanuman, Aku tahu kena(l) asal-mu, Ibu-mu Tuan Puteri Siti Dewi, Bapa-mu Raja Seri Rama, Mu membawa sinjoh tarek si-anu kapada diri aku, Gila s'bara, mabok bingung, Dengar-dengar pesanan aku, Jikalau mu ta' dengar, Aku sumpah.</p>	<p>Prince Hanuman! I know your origin. Your mother was Princess Siti Dewi, Your father was Prince Sri Rama. Nudge and fetch my love to me! Make her mad and distracted for me! Hear my order; If you hear it not. I will curse you.</p>
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12. *Ilmu Wayang-Kulit*, a shadow-play charm called Ilmu To' Maha Siku Mata Api, the charm of Red-Eyed Maha Siku, from To' Dalam Wan Hamad.

Oh ohm sih sih,
 Prat sih, joh lemoh kool, lemoh
 kool.
 Audah, dokmah, dokchah, do-
 chah, bochah,
 Sia-nyi - i - i.
 Oh ohm sih sih.
 Parboh barbang,
 Platih platang,
 Dokmah, dokchah, dochah, bo-
 chah,
 Sia-nyi - i - i.

Before a *wayang kulit* perform-
 ance starts To' Maha Siku Mata
 Api is placed on the screen to-
 gether with the banyan tree.
 To' Maha Siku is the medicine-
 man, who saved Siti Dewi, when
 she—as a newborn child—was
 thrown out on the sea by her
 father Maharaja Wana. To'
 Maha Siku brought her up as
 his own child. The above
 charm, which sounds like cor-
 rupt Siamese is performed three
 times before the play starts.
 To' Dalam sings it and the band
 plays on the drums and gongs.

13. *Ilmu Main Petri*, the charm for a séance; from To, Bomor
 Omar, a medicine-man from the Ulu Kusial District.

Hai Hitam Seri Penaloh,
 Raja dari bumi,
 Mu dudok taalok dari telok sini,
 permatang sini,
 Jin Dohor bala sa-ribu,
 Sa-ribu nama, sa-ribu jadi,
 Menjatoh dari bumi,
 Hitam dari bumi,
 Jikalau ada sa-kawan juak-mu,
 Minta-lah daripada dia boleh
 balek,
 Jikalau mu jatoh dari hutan,
 raja dari hutan.
 Jikalau mu jatoh kampong,
 raja dari kampong.
 Mu jatoh hala dusun, raja dari
 dusun,
 Jatoh ka-ayer, raja dari ayer
 Jatoh ka-padang, raja dari
 padang,
 Jatoh ka-laut, raja dari laut,
 Jikalau mu jatoh sa-tengah an-
 tara, raja dari sa-tengah
 antara,
 Jikalau ada sakalian budak-mu,
 Minta-lah pulang balek ka-mu,
 Jikalau mu-jatoh keramat pa'-
 masjid pa' (?),
 Minta-lah pulang balek-lah ka-
 mu.

Black king of the earth,
 Live my servant among these hills
 and bays!
 Genie Dohor who brings a thou-
 sand ills!
 You of a thousand names, a thou-
 sand shapes!
 You who fell to earth and are
 black from the earth,
 If you have a crowd of followers,
 Entreat them to return.
 If you come from the forest, you
 are lord of the forest;
 If you come to the hamlet, you are
 lord of the hamlet;
 If you come to the orchard, you
 are lord of the orchard;
 If you fall on the water, you are
 lord of the water;
 If you fall in the field, you are
 lord of the field;
 If you fall in the sea, you are lord
 of the sea;
 If you fall in the heavens, you are
 lord of the heavens;
 Ask your followers to return to
 you.
 If you fall on a sacred spot * *
 Ask your followers to return to
 you.

Jikalau mu jatuh sa-tengah an- tara,	If you fall in the firmament,
Dewa dua-belas,	You are twelve divinities,
Jikalau mu jatuh dari bumi,	If you fall to earth, you are Smar.
Semar Hitam dari bumi,	Harm not nor destroy my body.
Minta-lah daripada-mu,	From this night I would become a
Jangan beri rosak binasa kapada tuboh aku,	medicine-man.
Daripada malam ini aku hendak menjadi Bomor.	

This is a request from the medicineman to Semar, the spirit king of the universe, to keep all evil influence away from the place where he performs a charm cure for a sick person.

14. *Ilmu pengaseh*, a love-charm from Ismail bin Yusoh, Sungai Bedal, Kelantan.

Hai mu Lang Puteh,	Ho, white hawk!
Engkau-lah sahabat aku,	Thou art my friend
Mari-lah engkau pergi ambil roh semangat si-anu itu,	Come go and fetch the soul and spirit of my love!
Jikalau tidor, engkau gerakkan jaga,	If she sleeps, wake her!
Jikalau jaga engkau gerakkan	If she stirs, make her arise;
bangun,	If she rises, peck her with thy beak,
Jikalau bangun engkau pagut dengan paroh,	Brush her with thy wings and tail, Seize her in thy claw
Kibas dengan sayap,	Bring her and make her love and long for me
Sapu dengan ekor,	With a great passion.
Pegang dengan kaki,	May I and my teacher be potent and avail.
Engkau bawa mari-lah bersama- sama terdengar aku,	
Kaseh sayang kapada aku,	
Chinta raya kapada aku,	
Rindu dendam kapada aku,	
Sidi guru, sidi-lah aku, sidi berkat,	
Kaseh-sayang-mu akan aku.	

15. *Ilmu pengaseh*, a love-charm from Dollah, batu 29, jalan Kuala Krai. He called this charm: "Ilmu yang kasar sadikit-sadikit, barang kali."

To' Daeng gelombang ka-api,	? * * * *
Naik ka-langit jadi kasap,	Mount to heaven and become smoke!
Tundok ka-bumi jadi hulubal- ang Allah,	Stoop to earth and become Allah's captain!
Rai(b) aku dalam kandang kandong,	I vanish in the fold of the Almighty.

Sidi guru, sidi-lah aku,
Kata berkat la-ilaha ila-llah.

May I and my teacher avail
By virtue of the words "There is
no god but God."

16. *Ilmu jampi orang-orang sakit senok di-dalam perut*, from
Ismail bin Yusoh, sungai Bedal.

Hai anak Jin Seri 'Alam Berma
Kacha,
Yang mereksa di-medan halaman
bumi,
Engkau-lah penghulu dari bumi,
Dan raja dari bumi yang
menanggung sakalian
Juak-juak-tan Jin dari bumi,
Engkau dengar-lah pesan-pesan-
an aku,
Siapa juga yang menunggukan
seksa di-atas anak Adam,
Yang membawa pening rilu,
panas angkat, miang risa, senok
sula, muntah chekak,
Jika puaka penggawa-mu dari
bumi,

Engkau panggil balek kedari
mula asal,
Jangan-lah sampai membawa
sakit susah
Aku minta pulang puleh saperti
sedia kala,
Engkau dengar-dengar pesanan
aku dan gemanak aku,
Jikalau engkau tiada dengar
pesanan aku dan gemanak
aku,
Kelak-kelak dĕrhaka-lah eng-
kau,
Sidi guru, sidi-lah aku, sidi
berkat.

17. *Ilmu pengaseh*, from Nik Man, To' Guru wayang-kulit,
Kampung Tungku Temenggong, Kota Bharu.

Hai Dom baka,
Chinta rasa leha mabok leha
gila,
Mabok ka-aku dengan chahaya
Allah,
Aku mabok ka-mu dengan cha-
haya Muhammad,
Mu tundok kaseh mabok sayang
ka-aku,
Saperti ayam dengan padi,
Saperti asam dengan garam,
á ä mak muk dak jak.

Ho * * * * *
Feel always love and madness for
me,
Be mazed with love for me with
the light of Allah,
I will be mazed with love for you
with the light of His Prophet,
Bend low in love and longing for
me,
As a chick loves grain
As acid mixes with salt.
* * * *

18. *Ilmu main petri*, a charm for a medicine-man's *séance*;
from Dollah, batu 29, jalan Kuala Krai.

Hai Chahaya, malum chahaya,
Chahaya kuning bersipat
kuning,
Chahaya hijau bersipat hijau,

Brightness that wears many
colours,
Yellow, green, white and purple.
I know your origin!

Chahaya puteh bersipat puteh,	It is not I who am clever
Chahaya ungu bersipat ungu,	It is brightness that discerns the
Aku tahu kena(I)asal chahaya,	good and the true;
Bukan aku jadi pandai,	That sees through slander and
Bukan aku jadi bijak.	secretiveness.
Chahaya ini pandai makan	That shows the right road,
(b)oleh,	The brightness of Allah and
Chahaya lihat bijak baik,	Muhammad
Chahaya jangan tudoh tindeh,	The brightness of the Prophet of
Chahaya jangan susup sem-	God
bunyi,	May I and my teacher avail
Chahaya beri jalan yang betul	By virtue of the words,
benar,	"There is no god but God."
Chahaya Allah, chahaya Mu-	
hammad,	
Chahaya baginda rasul Allah,	
Sidi guru sidi-lah aku,	
Kata berkat la-ilaha ila'llah.	

19. *Ilmu pengaseh*, a love-charm from Wan Dollah, Pasir Mas.

Hai Rahim!	Jikalau mud tá masokkan nyawa
Bapa-mu empat-puluh hari,	anak ada lembeh.
Ayer sa-titip jatoh ka-bini.	Aku sumpah-lah mu,
Mata-mu jadi dahulu,	Derhaka pada Allah, derhaka
Mu bersipat telaga darah,	pada Muhammad,
D', wadi, mani, manikam,	Sidi guru sidi berkat
Hai Raja Brahi,	Kata la-ilaha ila'llah.
Mu masokkan nyawa anak ada	
lembeh.	

20. *Ilmu gagah*, a charm for strength from To' Guru 'ku Nejah, an old Malay, who came down from the kampongs behind Ulu Kusial to teach some Malays on Kuala Hau. He spoke a terrible dialect for which reason I am afraid there are errors in my copy.

Lanung lanang,	Asal gunong pulang ka-gunong,
Asap, batu, badan,	Asal padang pulang ka-padang.
Sang Kemari. Sang Kemaroh.	Pulang balek-lah mu,
Tukang Kemari, Tukang Kema-	Pulang balek Akar Cheheng
roh,	nama-mu.
Wah batu Sang Kemari, Sang	Sang Kemari, Sang Kemaroh,
Kemaroh,	Tukang Kemari, Tukang
Hati P'cheheng, Sang Kemari,	Kemaroh,
Sang Kemaroh,	Pulang balek-lah mu,
Batak tua raja di-hutan,	Adek-adek, ayi-ayi,
Raja Ba(n)tara tujuh beradek,	Bunyi ribut salah,
Asal laut pulang ka-laut,	Ketiga hujan salah,

Berjang t'tegoh pintu langit,
 Penjuru di-pintu bumi,
 Aku kesat dengan Semar,
 Asal Dewa Malim Unong,
 Bukan aku punya kesat,
 Mindok asal punya kesat,
 Bukan aku punya kesat, di-
 dalam asal punya kesat,
 Om paling, mohon paling,
 Paling kaki, paling kepala, pal-
 ing hati, paling hawa,
 Paling tujuh pertala bumi,
 Paling tujuh pertala langit,
 Aku nak paling dengan kata
 Allah, paling kata Muham-
 mad,
 Paling baginda rasul Allah,
 Risit risit sembilan bala,
 Inshj'llah kata Allah, ás-simpan
 kata Muhammad,
 As-panung kata raja Brahi,
 Pu' mok pu' sa-gumbong tinggi
 ketam bisa nama anak,
 Seri Gedang nama bapa,
 Naga Pa' Sih nama anak,
 Sang Sari nama ibu,
 Pulang balek-lah mu,
 Akar Cheheng nama-mu,

Jikalau engkau ta' pulang balek,
 Aku sumpah dengan derhaka
 kepada Allah,
 Paling kaki, paling hati, paling
 hawa, gunong paling,
 Dengar kata Allah
 Aku nak paling
 Dengar kata Muhammad!
 Risit risit sembilan bala,
 Insha'llah kata Allah, a's-simpan
 kata Muhammad,
 A's-panung kata Raja Brahi,
 Sidi guru sidi-lah aku,
 Sidi berkat dengan kata Allah.
 Sang Kemari=Hantu hutan.
 Sang Kemaroh=Hantu ayer.
 Batak tua raja di-hutan=Hantu
 Raya.
 Raja bentara tujuh beradek=
 Hantu Raya's seven children,
 rulers of the seven kingdoms
 (floors) of the earth, one
 under another.
 Raja Brahi=the king of love
 passion.
 In its present form this interesting
 charm is hardly translateable.

21. *Ilmu pengaseh. To' Guru 'ku Nejah.*

Hai Nak Kuang,
 Hamok nak Kuang,
 Mu mari-lah makan jamuan
 aku,
 Boleh aku nak beri makan
 ka-mu,
 Boleh bagi hajar aku,
 Hai hantu hutan,
 Jembalang hutan,
 Hai Hantu Raya s'pukang raya!
 Hai Pari! mu saudara aku,
 Mu pergi-lah ambil si-anu itu,

Bawa kaseh sayang dengan aku,
 Mu bawa sa-nasi makan, ayer
 minum, sa-kain pakai, sa-lima
 mani(?),
 Jikalau mu ta' mari aku sumpah
 mu ta' jumpa pintu shurga,
 Aku tahu usul-asal-mu,
 Nong Mani nama-mu,
 Sidi Hawa mani-mu,
 Adam nama aku,
 Sidi guru sidi-lah aku,
 Sidi berkat pada aku.

22. *Ilmu budak-budak kechil yang menangis sa-lama-lama-nya*, a charm for convulsions, from Ismail bin Yusoh, Sungai Bedal.

Hai salam alaikum,
 Hai sawan,
 Aku tahukan asal-mu,

Greetings be to thee,
 Convulsions!

Sawan-sawan saratus sembilan-	I know your origin.
puloh,	one hundred and ninety
Mu keluar dari sak uri tembuni	You came from (?empty) after-
ketuban batai,	birth, caul and placenta.
Mu dengar-dengar pesanan aku	Hear my message and instructions.
dan gemanak aku,	Bring no weeping or crying,
Mu jangan membawa beteriak	No fever, headaches or coughs.
tangis,	Whoever hears not my instructions.
Mu jangan bawa panas angkat,	Is a traitor to the Supreme Teacher
pening relu, batok isak,	(Batara Guru).
Jika siapa tiada dengar gemanak	
aku,	
Derhaka-lah mu kapada Nenek	
Ba(n)tara Guru.	

23. *Ilmu pada bicharakan orang-orang demam dengan sebab mengena dari ayer.* from Ismail bin Yusoh, Sungai Bedal.

As-salam alaikum,	Greeting to thee,
Hai hantu ayer,	Spirits of the water,
Jembalang pari ayer,	Listen to my instruction and
Engkau dengar-dengar-lah akan	order!
pesanan aku dan (?) gemanak	Whosoever sits harming the child-
aku,	ren of Adam,
Siapa-lah juga yang dudok	Whosoever brings fever, restless-
menunggukan seksa di-atas	ness and headache at this season,
anak Adam ini,	If they are troops and officers of
Yang membawa panas angkat,	yours from these waters
miang risa pening relu masa	entreat you recall them, large and
ini,	small, old and young,
Jikalau puak-puak penggawa	I entreat you restore the sick to
engkau dari ayer sini,	health as of yore
Maka aku minta-lah engkau	Else ye are traitors to the Supreme
panggil balek belaka semua	Teacher, Shiva.
kechil, besar, tua, muda,	
Aku minta engkau pulang puleh	
bagai sedia kala,	
Jikalau tidak pulang puleh bagi	
sedia kala,	
Derhaka-lah engkau kapada	
Nenek Ba(n)tara Berahmana	
Dewa yang sedia kala.	

24. *Ini-lah di-namakan "Mandal" Suatu bacaan yang boleh kita tengok di-dalam kuku kita apa-apa yang kita minta.* From Kota Bahru.

As-salam alaikum,	Smear soot and coconut oil on the
Hey! Khadam Raja (?) Madrin	nail of the thumb, hold it up
Derima anak Sayidina Ali.	in front of the face, perform
Yang ta'alli yang bersifat	the charm, and one will be able

kesarongan Naga Pertala,
Yang dudok bertapa di-Gunong
Payong tanah Jawa!

Memohonkan kapada Tuhan
yang sidi sakti,
Minta pohonkan permintaan-
ku ini daripada engkau,
Turun berjijakkan kapada sifat
(fulan),
Menunjokkan jalan sakalian
sifat.
Yang di-kehendakkan minta
tunjok,
Kapada jalan yang sempurna
bagi diri (fulan).

Dengan berkat engkau,
Dan mu'jizat engkau,
Dan selamat engkau,
Serta dengan dalil-nya,
Yang di-kehendak itu,
Dengan berkat kapada Tuhan,
Yang menjadikan sakalian alam
ini.

to see the objects desired in
the soot on the nail.

Peace be upon Thee,
Ho! Raja (?) Madrin (?)
Derima, son of our Lord 'Ali,
Who revealest thyself in the (?)
skin of a magic dragon,
Who sittest a hermit on Umbrella
Mountain in Java,
I ask of God the lord of magic,
I ask that this my request to thee
be granted,
That thou descend and set foot
on so-and-so,
Showing the way of apparition.
Show us what we desire,
Set us on the right path.
By virtue of thy miraculous favour
Grant us thy revelation
Which we desire.
By the blessing of God
Creator of all the worlds!

25. Charms used by the Medicineman for the rice harvest.
Nik Man, Guru, Kampong Tungku Temenggong, Kota Bharu
7/3/31.

Ilmu tanam padi.

As-salamu alaikum,

Ibu-ku bumi,

Aku hendak kirim anak-ku Seri
Maning

Sampai enam bulan,

Datang ketujuh bulan,

Aku hendak sambut bawa pulang

Kapada istana tujuh tingkat.

Hai Jin Tanah!

Hantu tanah!

Simpang engkau sabelah.

Aku hendak kirim anak-ku Seri
Maning.

Hai Jembalang,

Aku tahukan asal guru-mu,

Gentar nama guru-mu,

Simpang engkau sa-belah,

Aku hendak kirim anak-ku Seri
Maning.

Hai Padi,

Aku tahukan asal-mu,

Daripada nur-nur,

Turun pada Muhammad,

Aku jadi pada chahaya,

Hak yang sa-benar-benar,

Laki-laki yang sa-padi,

Jadi padi-ku.

Hai Nabi Elias!

Aku kirim anak-ku, ,

Seri Maning nama-nya!

Jika sakit demam,

Engkau-lah pelihara,

Bila aku ambil,

Aku minta pada Tuhan yang
menjadikan.

Ilmu potong padi. Nik Man.

As-salamu alaikum,

Hai Adam lembut.

Aku tahukan asal-mu,

Seri Maning nama-nya,

Aku hendak sambut anak-ku	Hai Seri Maning,
Seri Maning,	Nur Maning,
Bawa pulang pada istana ketu-	Seri beseri,
joh pingkat.	Buah seri,
Hai Jin Tanah,	Batang seri,
Hantu Tanah!	Daun seri,
Simpang engkau sa-belah,	Bunga seri,
Aku hendak sambut anak-ku	Maning nur maning,
Seri Maning.	Seri Manikam,
Hai Jembalang,	Bukan aku mengambil dia,
Aku tahukan asal guru-mu,	Talib Arip mengambil dia,
Gentar nama guru-mu,	Beri jalan di-atas wali ya Allah.
Seri Maning nama ibu-mu.	

Ilmu mengambil semangat padi. Nik Man.

Gemar semangat,	Mari-lah engkau,
Anak-ku Seri Maning,	Aku hendak sambut dudok pada
Nur Maning,	istana ketujoh pingkat.

Ilmu mengambil padi oleh sebab kisar beras.

Hai Adam lembut,	Aku hendak mengambil anak-
Aku tahukan asal-mu,	ku Seri Maning,
Seri Maning nama-mu,	Hai Adam lembut,
Nur Maning nama ibu-mu,	Engkau jangan kechil-kechil hati,
Hai Jin Tanah,	Aku hendak ambil anak-ku Seri
Hantu di-rumah,	Maning,
Jembalang tangga,	Seri Manikam,
Simpang engkau ka-belakang-	Dengan berkat la-ilahi ila'llah.
ku,	

The above charms have been collected during the last three years in Kelantan.

MATRIARCHY IN THE MALAY PENINSULA.

By G. A. de C. Moubray.

Reviewed by R. O. WINSTEDT.

A somewhat diffuse but thoughtful work, one of the best by an Englishman on the Malay matriarchy. "What is truth?" asked jesting Pilate "and Mr. Aldous Huxley has at last given the answer: "What I think or feel today but I shall not feel the same tomorrow." So when, to quote Mr. de Moubray, he gives us "a cocktail mixture" of theories on the origin of matriarchy (after the pragmatic *recipé* of Mr. William James), I find his method very modern and far more stimulating than Victorian dogmatism. I am, however, too cradled in Victorian rationalism to believe in primitive tribes of Blougrams, whose conservative love of matriarchy and safety can beget—if in this context the expression is not absurd—group blindness to the physiological fact of fatherhood! With Mr. de Moubray I should reject the theory that polyandry and so matriarchy sprang up because primitive man, like Mr. Kipling, discovered that "white hands cling to the bridle-rein" and had a Spartan preference for his tribal militia over domestic ties. In the Malaysian region, there are most elaborate tabus for the conduct of Dayak wives, whose husbands are at war. I wish Mr. de Moubray had developed his passing allusion to totemism as the cause of matriarchy. Does it not put the cart before the horse? If patriarchy were in the air, why should not all the little 'weavers' and 'scorpions' be 'weavers' and 'scorpions' as the children of their fathers; and not, as under matriarchy, as children of their mothers? So, too, with Mr. Perry's "descent from the great Mother," based on "feminine figurines of the upper Palaeolithic, the protective Mother goddess of Upper and Lower Egypt, the goddess and nurse of the Egyptian king" and all Professor Elliott Smith's paraphernalia. Unless man is prepared to admit that the female of the species has always been hardier than the male and beat him originally in war as she can today in dancing feats and cabaret life, then surely the Great Mother only attained her greatness and sanctity because some primitive idiot in love—presumably man has always as now been the idealist—put her on a pedestal and deified her. Not until women already ruled the roost, would Great Mothers be more fashionable as forebears than Great Fathers! I confess that today I rather like Dr. Blagden's theory that economic causes (child-bearing, agriculture and house-keeping) led woman to settle down before man the hunter. Here Aristophanes with his *Lysistrata* seems to me a sounder psychologist and a better guide than Malinowski with his exceptionally imbecile Trobrianders solemnly ascribing pregnancy to the stork! In primitive days the father would be exposed to rather more hazards than the mother, and if the mother perished, so probably did the child. But are we getting

back far enough? Among some tribes marriage is associated with the fruit season, the best food time of the year. Was the sex instinct ever purely animal and periodic? If so, the parental family probably lasted only a few forgetful years, after which the male would seek another mate, and so matrilineal descent would be inevitable. "‘What is truth,’ asked jesting Pilate."

Mr. de Moubray has compared Malay matriarchy with that of the Bants of Canara and the Nayars of Malabar. A sound method because, through beliefs may be imported, the social organisation of the family withstands even great religious upheavals. But why not have taken also the Khassi matriarchy, seeing that between the Malay and the Khassi there are linguistic, anthropological and cultural ties? The resemblance of the two matriarchal systems is in fact startling.

Mr. de Moubray insists rightly that the Negri Sembilan custom is elastic and adaptable. Had he possessed a knowledge of Dutch (which is easy to read), the "Adatrecht-bundel" and Willinck's book on the Minangkabau folk would have brought him further evidence. Twelve years ago in this Journal I quoted Willinck against a too rigid interpretation of the '*adat*' by the authors of "Rembau." Mr. de Moubray has made a gallant and, so far as I can see, satisfactory effort to collect verbally comparative material in Negri Sembilan, but would it not have been easier to consult the land-case records in Jelevu and Kuala Pilah? (And why does he reproduce a map of old Negri Sembilan, which I at least am certain is wrong? Yesterday and today and tomorrow I believe that the State of Jelai was Inas and Mr. Nathan and myself have produced evidence that deserves at any rate passing mention. However Mr. de Moubray is not writing on geography.)

I find the chapter on 'Values' wise and charming. Like Mr. de Moubray I am convinced that matriarchy has made the Negri Sembilan Malay the most intelligent independent and prosperous Malay in the country, and I am certain that it will be a very evil day for him (or should I say, her?) if the custom ceases to be what it has been (considering the Khassis) for several thousand years "his mat, when he sleeps, his umbrella when he walks, his boat at sea, his inheritance on shore"—

Jika tidor, menjadi tilam;

Jika berjalan, menjadi payong;

Jika di-laut, menjadi perahu;

Jika di-tanah, menjadi pusaka.

ADATRECHTBUNDELS.

INDONESIAN CUSTOMARY LAW VOLUMES

EDITED BY THE COMMITTEE FOR ADAT LAW AT LEYDEN

Vols. I—XXXI. 1911—1930. Together \pm 13500 pages.

Volume XXX of the series "Adatrechtbundels" has just appeared. It contains a complete table of contents of 44 pp. together with a 425 page list, in two columns, of Indonesian and other Oriental law terms inserted in the first 30 volumes. These figures will give an idea of the diversity of the material on Indonesian law and customs collected, either in the form of notes or taken down in the records of the Government officials, or in decisions of the law courts, in rare books, articles, etc.

Besides those actually connected with the administration of law in Indonesia, and students of comparative law, ethnologists will find new and interesting material in these volumes.

The history of the series is as follows:—

In 1909, Professor C. van Vollenhoven, LL.D., of Leyden University, proposed to the Royal Institute of Philology, Geography and Ethnology of the Dutch East Indies at the Hague that particulars be collected regarding the Customary Law (Adat Law) prevailing in various parts of the Dutch East Indies, and that these be published from time to time. Arrangements were made with the Batavia Society and the co-operation of the Colonial Government was obtained. A Committee for Adat Law immediately started their work under the chairmanship of the Arabian Scholar, Professor C. Snouck Hurgronje, LL.D., with Professor C. van Vollenhoven acting as Hon. Secretary. The first volumes (or "bundles" as they were called) were published in 1911.

The valuable work thus begun soon assumed far greater proportions than had originally been planned. In 1917, the Adat Law Foundation was established with the object of studying customary law (and as far as possible making a collection thereof) in the whole of that part of Asia known as Indonesia. By Indonesia is here understood the Dutch East Indies, the countries of *Formosa* (Indonesian section of the inhabitants), *the Philippines*, the non-Dutch parts of *New Guinea*, *Timor* and *Borneo*, *The Malay Peninsula*, the *Chams* as well as *Madagascar*.

In order to obtain the necessary information from the parts of Indonesia beyond the Dutch East Indies co-operation was sought from other countries interested, which so far has led to satisfactory results, while internationally the sympathy and co-operation was enlisted of the Union Académique Internationale at Brussels.

The "bundles" each of 400-600 pages have followed each other in rapid succession, so that nineteen years after their appointment the committee were able to edit and publish the present 30th volume: the 31st "bundle" appeared in 1929.

(Published by *Martinus Nijhoff: The Hague.*)

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CONTENTS

A Popular Account of the Mammals of Borneo,
by E. BANKS, B.A. (Curator of the Sarawak Museum).

Plates XI-XIX.

A POPULAR ACCOUNT OF THE MAMMALS OF BORNEO.

by E. BANKS, B.A.

(Curator of the Sarawak Museum).

(Plates XI-XIX).

To write a popular work on Natural History is to earn the toleration of the more scientifically minded whilst to write for them alone is to be labelled "highbrow" by those who would have appreciated it in a more simple form: to write for both will not satisfy either but there is one point here to which neither should object—namely the illustrations. They are taken of captive animals and though they have not the same appeal as wild life photographs will go some way to familiarize residents in Borneo with the Mammals they are likely to meet.

I should here say that the pictures were taken by Mr. C. Jee Koo, for many years Taxidermist to the Sarawak Museum, the trouble and extreme care he has taken being reflected in the excellence of his results.

The visitor to the East not unnaturally hopes to compare what mammals he may see with those of Europe but obtains little satisfaction in this respect. The Anteater and the Sea Cow are unfamiliar to him and he is not likely to encounter any of the Whales which occasionally turn up, though Porpoises and Dolphins are fairly common.

The Deer, a representative of the Indian Sambhur, is a heavy beast of the woodlands with horns seldom exceeding 20 ins. in length; the Barking Deer is superficially like a Roebuck and the Mouse Deer have no European counterpart—they resemble a Rabbit or a Hare in their size, colour and white tail but have short ears and long thin, hooved legs. Wild Pigs abound but unlike the European form are particularly noted for their very bristly faces, from which they get the name "Bearded Pig": the native domestic pig which is not the wild one tamed, is much shorter in the face and leg, often with white "stockings." Water Buffaloes occur in some places, in many cases certainly the descendants of domestic ones run wild; there occurs a small Wild Ox, the "Temadai," a relative of the Javanese "Banting" and Burmese "Tsaine," ever so much smaller of course than the "Seladang" or the Indian "Gaur." The Rhinoceros is perhaps the smallest of its kind, practically never encountered in Sarawak by a European, and the only living Elephants are found in N. Borneo, almost certainly the descendants of a herd let loose, it is said, by the Sultan of Sulu; fossil Elephant teeth have however been recorded in Sarawak. Tapirs in spite of statements to the contrary do not occur in Borneo.

Of Carnivores there are no Tigers or Panthers, the largest cat being a beautiful Clouded Leopard which in Borneo neither troubles Man nor his possessions; quite a number of prettily marked medium size cats occur but on the whole are rather rarely taken. Civet Cats abound, notable for the sharp-pointed face, long tail, unsheathed claws and comparatively small size, which does not make them formidable opponents. A Bear is quite common, rather small and black with a white or yellow marking on the throat. Otters are numerous, not unlike European ones whilst there is a Badger, a Marten and a Stoat each but little resembling their European counterpart and perhaps more rarely encountered. There are no Foxes, Jackals or Wild Dogs in Borneo.

Rabbits and Hares are missing but the usual Porcupine is well to the fore. Squirrels abound both in species and individuals, from some as large as a Rabbit, down to minute little forms no bigger than Mice, including a number which glide from tree to tree. Rats and Mice are common here as everywhere, many of them peculiar to the country.

Insectivores, if one excludes the Tree Shrews as probably lowly Primates, are not characteristic of Borneo, in fact except for a few small and rare Ground-Shrews the only notable Insectivore is the *Gymnura* or Moon Rat, a beast which has a good deal of affinity with Hedgehogs if one makes allowance for its white, spineless fur and long, scaly tail. The Flying Lemur has drifted into a Sub-Order of its own. Bats are incredibly numerous both in individuals and species, from minute forms up to the huge Flying Foxes spanning some four feet or more.

Of the Primates I have already mentioned the Tree Shrews, perhaps more numerous in species in this country than anywhere else; in fact Primates are so well represented in Borneo that the veteran naturalist A. H. Everett was formerly deputed to seek here for that mythical being, the "Missing Link," in which it was supposed Man and Apes had their common origin. The Slow Loris is the only Lemur found, a small, round, tailless animal with large eyes, the little buff-coloured Tarsier—that strange looking animal with rounded head, enormous eyes and curiously elongated fingers and toes—having been pronounced more of a Monkey than a Lemur. Borneo is rich in Monkeys: besides two Macaques there are five or six Lotongs or Langurs and a large, strange looking, buff-coloured Monkey, the male having a protruberant nose two to three inches long. Of the Apes, the Gibbon is of course common and the Orang Utan, that large red-haired monstrosity so often human in appearance and actions, is quite plentiful in restricted localities.

All Mammals are not distributed evenly throughout Sarawak, some are local, some live in swamps, some on plains, some in secondary growth, some in old jungle and a few on mountain tops so that a consideration of the flora and topography of the country is necessary before a clear understanding can be reached.

To all intents and purposes Sarawak is covered in forest of some sort from end to end, clearings are negligible from a faunistic point of view and we lack even those occasional "lalang" grass covered plains rather characteristic of parts of N. Borneo. Large clearings are made annually by felling and burning the timber but the rice crop is hardly gathered before a secondary growth springs up. There are a few large settlements and a number of small ones with permanent but comparatively inextensive clearings and in widely scattered parts of the country rice planting in open wet fields is carried on to a relatively small scale; it is evident that clearings are so often transitory and always comparatively small that few Mammals, except some Rats, specialize in or become characteristic of such areas.

The deltas of all large rivers and the banks of their lower reaches as far as the tide is effective are covered variously in Mangrove or in "Pedada" trees or in "Nipah" palms, their roots washed by silt and mud quite uninhabited by any Mammals save a few Wild Pigs. In the trees Monkeys swarm, Kras* and to a less extent Broks,* Long Nosed Monkeys, grey and black "Lotong" Monkeys and even Gibbons occur, together with occasional colonies of "Flying Foxes;" all these are also found of course in old jungle and elsewhere and though the "Kra" is typical of a Mangrove, Pedada or Nipah Swamp perhaps the Long Nose Monkey is the only one peculiar to this type of Forest. Part of the coast from Igan to Bintulu is low and the ground very swampy, clothed to some extent in Sago Palms interspersed with various other swamp trees; Mammals are not noticeable here though Deer, Pigs and Bears occur and there are always a few Monkeys and Squirrels strayed into this area: the Long Nosed Monkey is absent from this region which one would have thought eminently suitable to it.

The second growth that springs up in clearings, whether made naturally or artificially, is the next type of vegetation; in the former case it is found chiefly near the sea-shore or on the site of a very occasional forest-fire, in the latter case in old "padi" farms. Huge areas of old jungle have been and still are felled by natives for rice-planting so that in comparatively thickly populated areas such as the Saribas and Kapit one may see for days practically nothing but secondary jungle and this is so to a less extent in some other parts of the country. This secondary type of growth varies a good deal but is mostly rather dense, consisting of sappy, pithy, soft-stemmed shrubs, harder wood only appearing later: it is about seven years before the aborigine thinks fit to fell and burn it to provide enough ash to make the ground fruitful again. Secondary growth is perhaps the densest kind of forest and the field of view is usually limited to only a few yards; owing to the slender nature of the branches arboreal forms though often found

* Macacus Monkeys.

feeding there do not as a rule live in it: "Kras" are the commonest, with grey and black "Lotong" Monkeys, many small Squirrels but not the very large ones. Ruminants are particularly fond of this region, both for feeding and resting, the Wild Ox, the Sambhur Deer, Mouse Deer and to a less extent the Barking Deer all being attracted by the succulent stems and fresh green leaves.

Of the true forest, old jungle proper, there are many variations, for it may occur from sea-level to high up on the mountains. Swampy forest areas depend on the kind of tree, hardwoods being rather more open but as a rule on mountain and plain there is a comparatively small number of enormous tree trunks, a goodly number of lesser saplings and a great many thin "withhies" about the height of one's head and more or less profusely leaved, so that though offering no great obstruction to movement the field of view is comparatively limited. Movement on the ground is still easy but as every tree intermingles with the branches of its neighbour, Squirrels and even Monkeys may move leisurely about without more commotion than would attract the attention of a trained ear; in fact the best time to look for animals is the early morning when most of them feed—the dew or rain is then still heavy on the branches and the slightest movement sends down a shower of drops which could hardly escape the notice of the most unobservant.

The climate of Sarawak is as a whole one of damp heat, the annual rainfall varying from 150—200 inches, mostly falling in the wet season—the "landas"—between September and March, the rest of the year being comparatively fine and dry. A comparison of five years rainfall readings, taken at various lowland Government Stations throughout the country, shows that at all seasons the Baram District and region to the North is rather wetter than the coastal area from Sibu to Bintulu; Kuching and Western Sarawak have the usual dry season but for some reason have a very pronounced wet one and constitute the wettest part of the lowland country in Sarawak.

Much of Sarawak is an extensive plain, sometimes flat and sometimes undulating, remarkable in that scattered about are a number of hills, sometimes Granite, sometimes Limestone, sometimes quite isolated, sometimes more or less continuous for some way, but all within a few hundred ft. of 3000 ft. high. The interior of Sarawak bordering on Netherlands India Territory is rather different, nothing but a succession of steep, broken hills some of which culminate in peaks 6 and 7000 ft. high; owing to the hilly nature of these parts one's view from any mountain top is so restricted by the neighbouring hills that (short of using an aeroplane) it is impossible to get a general idea of the lie of this part of the country as a whole and the average map presents a continuous chain of mountains stretching nearly the length of Sarawak, in a N. E. & S. W. direction. Actually there are two or three breaks in the continuity of these mountains, how many

more it is impossible to say, for the hills sometimes give the impression of being interlocking spurs from adjacent mountain masses between which flows a river in its deep gorge, which may or may not eventually break the continuity of the chain.

Starting in the West of Sarawak there are two apparently isolated mountains, Poi and Penrissen, from 4000 ft. to 6000 ft. respectively, probably representing spurs of the neighbouring Bajang Mts. from across the border; to the N. E. separated from Mt. Penrissen by about 50 miles of lowland, rise the Kalinkang Mts. running some 70 miles in this direction and maintaining an average altitude of about 3000 ft. Towards Lobok Antu on the Sarawak side these mountains dip down to sea level and in many places become discontinuous to rise again to the Northward, still very broken, as the Batang Lupar Mts. which still further to the North attain an altitude of about 3000 ft. and appear to run continuously parallel to the Rejang River until they may join up with Mts. Bulan and Tibang, peaks some 7000 ft. high, forming the source of this and many other rivers. This and the country immediately further North is the only important part of Sarawak I have not yet visited but there is no doubt about its hilliness and on proceeding into the interior from Lio Matu on the Baram River the Pa Mambo Range some 6000 ft. high is encountered coming up from the S. W. and running steadily for perhaps over 100 miles to the N. E. to end in Mt. Murud, nearly 8000 ft. high. This range of mountains is pierced once by a steep, vertical and quite impassable gorge in which runs the Baram River (here known as the Pa Klapang) as it emerges from an extensive plateau some 3—4000 ft. high to the Eastward of these mountains. Mt. Murud appears to mark the end of this range for there is a marked gap at its Northern end, but in the neighbourhood of Batu Lawi* in the Ulu Limbang the mountains again appear in a high unbroken chain steadily running North Eastward into the head waters of the Trusan; at the source of the Trusan River (here the Pa Kelalang) is a fertile valley at an altitude of some 3000 ft. where the local Muruts have made irrigated rice fields, and these mountains I have mentioned clearly cut across this valley to form a watershed between the Pa Kelalang on the Sarawak side and the Pa Bawan on the Netherlands India side, in the valley of which the local Muruts have similar irrigated rice fields. By now one is close to the border of the British North Borneo Company's territory, into which the hills appear to run some way; I have no information about this area beyond its general hilliness and this high range of hills must extend well towards Mt. Kinabalu some 13 500 ft. high and not so very far away.

I have gone into the lie of the country in some little detail for it has had a surprising influence on the Fauna. From near Mt. Kinabalu in N. Borneo there appears to run almost continuously

* Mjöberg places Batu Lawi to the S. W. of Mt. Murud.

through most of Sarawak a high range of hills over 3000 ft. passing through the headwaters of the Trusan and Limbang Rivers, crossing the Baram River as the Pa Mambo range, extending further South (recently appropriately named the Nieuwenhuis Mts.) into Mts. Tibang and Bulan. Here I believe there is a split in the mountains, those of the Batang Lupar and Kalinkang Mts. running discontinuously at a lower altitude along the Sarawak-Netherlands India boundary: I have unfortunately not visited this particular neighbourhood but from what maps there are and from general considerations the high mountain range appears to bear more to the South and East into Netherlands India Territory as the Schwaner Mts. along the true left bank of the Kapuas River and however continuous they may be it is impossible either by these mountains or by those on the Sarawak border to link up Mts. Poi and Penrissen with the high Northern chain, for either the broad Kapuas River or long stretches of lowlands effectually intervene.

The significance of this topography is apparent when there is found a meagre but most interesting Fauna (consisting of about six species of Squirrels, two of Rats and two of Tree Shrews) which is found only above 3000 ft. on mountains such as Kinabalu, Murud, Dulit, Penrissen, Poi and possibly others; these Mammals—together with many peculiar species of birds—are to be found only on the tops of the mountains mentioned and nowhere at all on the their lower slopes or on the surrounding or intervening lowlands but in spite of this it is still possible to obtain on Mts. Penrissen and Poi some high altitude Mammals and Birds characteristic of the tops of Mts. Dulit, Murud and Kinabalu, even though there are in many places no land bridges 3000 ft. high in between and the species in question are quite unknown below that level. Nor is this high altitude Fauna uniform, for two Mammals—and a few Birds—on Mts. Penrissen and Poi differ racially from those on Mts. Murud, Dulit and Kinabalu whilst two others at least occur unchanged in spite of their isolation; further, about half this fauna is what one might expect—high altitude representatives of more widely distributed lowland races but the rest of this Fauna, including many species of Birds, has no lowland representative whatsoever. This high altitude Fauna which does not go below 3000 ft. is therefore discontinuous in its distribution, partly representative of lowland races and partly peculiar, as it were but the relic of former more widespread perhaps once lowland species which have been pushed up onto often isolated mountain tops by various agencies and now exist unchanged in but a few favoured localities.

A few Mammals never go above sea-level and a few others, like the Pig and the Deer, occur indifferently on mountain tops and down below; but the main Bornean fauna is found commonly throughout the lowlands and on hills or the lower slopes of mountains up to about 3000 ft. and only more rarely above that altitude. An altitude of about 3000 ft. is therefore of much importance in an

understanding of the local faunas for unbroken series of such mountains, together with broad impassable rivers, have limited the distribution of not a few species.

This main Bornean fauna (excluding Bats) consists of from 90 to 100 species of Mammals but they are not uniformly distributed throughout the country; six species differ racially in the North East from their representatives in the South and West, bearing out what is perhaps more apparent in Birds, wherein some 20 out of 200 show such racial differences. The proportion is not large but there is a uniformity of distribution which points to two very definite faunas, one in the North and East, the other to the South and West, the Baram District in Sarawak and perhaps the Bulungan in Netherlands India Territory representing the transitional areas, wherein (or at any rate the Baram District) North Eastern or South Western races may occur unchanged or as intermediates.

It would be at any rate thin to divide the Bornean lowland Fauna into two on account of some half dozen racial differences in Mammals but fortunately the division is nobly supported not only by more numerous racial differences in Birds but also by the distribution of various other Mammals. In N. Borneo alone there are half a dozen good lowland species which never occur in Sarawak at all and there are some ten others which may be found in the Lawas, Limbang, and even as far South as the Baram Districts but never in Central or Western Sarawak; further there are six other Mammals which are common enough in N. Borneo but exceptionally rare in Sarawak or Western Borneo where they have been taken but once or twice. I cannot however recall a single Central or Western Sarawak species which does not occur in N. Borneo, nor is there one which is even common in the West but rare in the North.

More remarkable still the division of the Mammal Fauna into N. & E. and S. & W. sections is mildly paralleled by the original distribution of some Bornean Natives, for the Iban or Sea Dayak occupies much of the South and West, the Murut and Dusun the North and East, the Kayans and "Kenyahs" the intervening Baram District, a transitional area wherein the other races mentioned (notably the Iban) do not occur, except by recent immigration.

There are therefore several divisions of the Mammalian Fauna of Borneo: most Mammals are common throughout the country on plains, in the hills or on mountains up to about 3000 ft. above which they are not so common; besides this common Fauna there are a few Mammals in the North and East racially different from their representatives in the South and West, a few Mammals found commonly the North and East and either very rarely or often not all in the South and West. Lastly there is a very small Fauna only found on Mountain tops above 3000 ft.

Before passing to a detailed account of Bornean Mammals I must record my obligations to the various agencies which have made this possible: I have freely consulted the works of Blanford, Whitehead, Everett, the late Mr. Oldfield Thomas and the late Dr. Charles Hose, and am particularly indebted to the last for the loan of copious M.S. notes made by A. H. Everett, when he contemplated a work on the Mammals of Borneo. I am further indebted to the authorities of the British Museum, Leiden Museum and Raffles Museum for permission and assistance in examining the relevant specimens and am particularly beholden to Mr. F. N. Chasen of the last institution for frequent advice, assistance and encouragement. To the Government of Sarawak and its administrative officers in outstations I owe a debt for facilities offered and assistance freely rendered whilst last but not least I am personally beholden to Mr. C. Jee Koo for his illustrations.

ORDER I EDENTATA.

(Sloths, Armadillos & Anteaters).

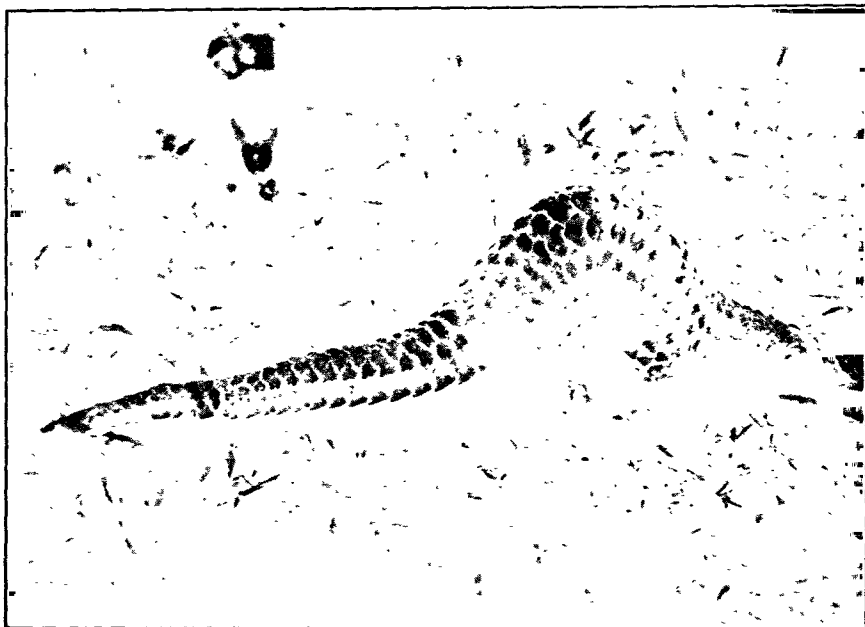
The Edentates comprise a number of usually toothless animals which present such a diversified appearance and distribution that they give the impression of a number of Families lumped together for convenience.

Extreme forms include the present small South American Sloths and their extinct relatives as big a Rhinoceros, together with the Hairy Anteater and the Armadillos of the same region. In S. Africa there is the large Cape Anteater or Aard Vak, bizarre in appearance, and side by side the Scaly Anteaters found as well in India and Malaya. The scales of the Anteater are not in the least comparable to those of the Armadillo of S. America, in fact most of the superficial resemblances are due to similar feeding habits so that considering the diversity of this Order generally it is not surprising that some enterprising Zoologist has sought to remove these Scaly Anteaters from its midst. Similarly it has been suggested that the African and Oriental forms be separated generically, the former lacking any hairs when adult, having a flat, depressed, shovel shaped head and I believe "ventral ribs" supporting its stomach, analogous to those found in certain Reptiles.

Manis (Phatages) javanica Desm. (Plate XI).

THE SCALY ANTEATER: Malay: *Tengiling*; Murut: *Balukun*; Tagal: *Caloni*.

This is a very stoutly built animal up to three feet or more in length covered except on the throat, breast, abdomen and inside of the legs with coarse, yellowish brown scales, serially arranged. The thickset body, broad, powerful tail about half the total length of the animal and the small head with pointed, tapering snout, are prominent features: the tongue is long and thin, the external ear reduced, the eyes small and black, the feet provided with



The Scaly Anteater (*Manis javanica*).



The Smaller Mouse Deer (*Tragulus kanchil hosei*).

strong claws. The appearance of the animal is peculiar, back high arched, head carried low and close to the ground, claws of the fore feet pointing inwards and upwards, for the animal has to walk on the outer, post-axial border of its "hands" as these claws are too long and curved to permit walking on its palms; the down curved tail is carried with the tip just clear of the ground.

The scales are the most peculiar feature and are probably to be regarded as a number of hairs cemented together (somewhat as in a Rhinoceros horn) and are not the same as those of Fish and Reptiles, in fact I believe in the embryo the hairs appear before the scale and the ridges marking the component hairs may be seen on each adult scale, the interspaces between these hairs having in the embryonic stage been filled up with epidermal tissue.

There are a number of coarse short hairs on the under-surface and some more protruding beyond the scales on the upper and undersides of the tail, more particularly in the posterior region. The scales on the flanks and hind legs are more pointed than those elsewhere and have a well marked median ridge. The scales on the hind legs have their free ends pointing straight down in the general direction of the long axis of the limb but those of the forelimbs are arranged spirally, pre-axial scales with the free ends pointing backwards and slightly downwards, median ones pointing straight back and post-axial ones pointing backwards and slightly upwards, an arrangement presumably to prevent the free edge of the scale from catching in the soil and offering increased resistance as the animal digs.

It is a most accomplished excavator and elsewhere its burrows may extend as much as eight feet into the ground with a circular dwelling chamber at the end; in Borneo I have never noticed many signs or any marked tendency in captives to go digging, in fact they are most often taken in, and generally make for, trees. The country being forest covered from end to end it is possible that it doesn't visit the ground much more than to feed and is able to pass from tree to tree. It is of course a most expert climber and will shin up the smoothest tree trunk or post by taking a widespread grip with its forelegs and in one motion bringing its hind legs close up to them, progressing rather in the manner of a "looper" Caterpillar; I have seen it when walking upside down suspending itself solely by its forelegs and, when climbing upright, grip the tree trunk with its hind feet and tail only, the forefeet and it body swaying freely as it investigates its surroundings; in this position it is said to be able to hold itself, to tuck in its head and mimic the broken off end of a dead branch, though I have not observed this. The soles of the hind feet are apposable, as in an aberrant Civet Cat (*Arctictis binturong*) and the tail is of the greatest use to it in climbing: in going up it is laid obliquely across the trunk and the sharp points of the scales on its edges no doubt help to prevent the animal from slipping back, whilst in descending

head foremost the tail is even more prominent, curling round any irregularities and acting as a brake. The tail is furthermore prehensile and specimens may be suspended from a branch by the tail only (a distinction also shared by the "Binturong") though after between 5 and 10 minutes the weight of the animal is too much for the tail muscles; on the underside of the tip of the tail there is a small bare patch suspected to be sensory. Whilst therefore the Anteater is provided with the usual facilities for digging it has many specializations towards an arboreal mode of life, which may have been readily adopted by it in such a heavily forested country as this: our Anteater is possibly more arboreal and less fossorial than is thought, particularly as true digging animals like Badgers, Porcupines and some Rats are provided with long, tactile whiskers for feeling their way in the dark, such aids being quite absent in the Anteater.

It makes no noise beyond a snuffling in its nose* which organ is so much in use that its sense of smell is probably well developed; its sight is poor, at any rate in the day time, and it will bump into objects it should easily have avoided: according to general accounts it will sit up on its tail and hind legs to take a look round but I have never seen it do so. Its sense of hearing is fair and at the sound of footsteps it puts its head between its forelegs, its hind legs on top of that and the whole is wrapped round by the tail into a scaly ball not to be opened by any ordinary strength. Termites are quoted as its usual food but it also takes various kinds of ants: in captivity it was always too restless to take any notice of the different foods offered and I used to have to let mine go in the garden under supervision for an hour or so morning and evening when it would poke its pointed nose in crevices, under flower pots and round the bases of trees to take a number of ants of various kinds. Other observers found them to feed on chopped raw meat, cooked eggs and rice, unboiled milk and milk puddings.

Nothing but the stoutest box or cage will hold a captive "Tengiling," for if there is a plank started or a bulge anywhere he seems to find it and by dint of partially rolling himself into a ball and then expanding, his own strength together with the grip obtained by his scales is sufficient to enlarge the hole for his escape.

A single young one is born at various times (Museum specimens in February, March (twice) August and October) resembling its parents except that it is light yellowish in colour. Various observers have noted that the young is carried clinging obliquely to the upper surface of its mothers tail and suppose that in time of danger the offspring somehow becomes enclosed in the ball when the tail is wrapped round the curled up animal: there are said to be two pectoral mammae.

* The Burmans fancy it calls just like a man in the jungle but anyone who answers this call is sure to die.

The animal is a lowland species in Sarawak, not occurring above 3000 ft. if as high. Its dried skin is in some demand among Chinese for export to their country as medicine and may often be seen in outstations bazaars; at times it realizes \$30 to \$40 per pikul, rather less than \$2000 worth being exported in some years. The flesh is said to be good eating, white and like veal, but it is not taken in any numbers for food; the Nagas say it must be killed before it curls up into a ball and touches its genital organs with its tongue, when its meat immediately becomes bitter: this superstition may have its origin in the musky smell of the animal, which is said to be so strong as to deter dogs from attacking it. The best Anteater story is common to Borneo and elsewhere: the "Tengiling" having thoroughly disturbed a Termites nest, lies down with all scales expanded and the wretched ants, having got between the scales to attack the supposed corpse, are trapped by the closing down of these scales and the Ant-eater moves off to the nearest pool; having entered the water the Ant-eater opens his scales and licks up the ants as they float about.

ORDER II SIRENIA.

(Sea Cows).

As the name implies, this Order has much to do with the Ungulata, of which the Cow is a typical example; the real position of these animals is however obscure, for they appear to have a number of things anatomical in common with Elephants notably the longitudinal rather than vertical succession of the teeth.

The Manatee of W. Africa and S. America and the Dugong of the East are the only living representatives but fossils have been found in California, some parts of Europe and even in Suffolk. Stellars Sea Cow, an animal inhabiting the Behring Sea and some 25 ft. in length, belonged to this Order but has become extinct in historical times owing to the rapacity of blubber hunters.

Halicore dugong Illig.

SEA COW. Malay; *Doyong*;

The Sea Cow is entirely marine, a large usually greyish brown animal up to 9 ft. in length in males, with a blunt whiskered head, thick body, small flippers and no hind limbs, the tail bearing two horizontal "flukes." The skin is hairless except in the region of the mouth, which owing to the bend in its jaw bones, opens downwards enabling this heavy, shortnecked animal to browse for its food on the sea bottom: the upper lip is peculiar in that it is cleft and the slit provided with opposing, stiff, blunt bristles not unlike those of a Porcupine, the whole apparatus, together with some scrubbing brush-like stiff bristles in the lower jaw, enabling it to collect its food, marine plants like *Zostera* or in the Malayan region a Phanerogram known as "Daun Setu" (*Enhalus acaroides*). Its teeth are most remarkable for the molars or grinders are replaced from behind forward as in the Elephant, the youngest teeth being

the posterior ones and the partitions between the various molars slight and porous; as many as five molars may appear, though seldom all at once, and it is even more surprising that whilst these teeth show signs of great wear in coping with gritty matter taken up with food, stomach contents show that the actual leaves are hardly at all bruised by these teeth. Incisor teeth are present, two of which in the upper jaws of males may project a little forward and downward as tusks; they resemble Rodents incisors in being covered front and sides with hard enamel, leaving a chisel shaped edge; their use is uncertain, scarred animals that have been recorded are just as likely to have been wounded in fighting as to have rubbed against coral or rocks on the sea bottom.

Not long ago Dugongs were sufficiently numerous near Tanjong Datu to be worth hunting and were harpooned at night from a boat, in the light of a reflector lamp; they were exceptionally wary and it was recorded that the spear required little or no barb, once the point entered the animal the skin and flesh exerting a grip sufficiently strong to hold the beast. It was said that the length of rope attached to the harpoon should be 40 ft., the length of the animals intestine.

Save for an occasional one in a fish-trap the animals are now no longer molested and Dugongs are I believe plentiful; apparently they rest out in deep water during the day and the broad swathes cut in the sea-grass in shallow water indicate their nightly visits.

The meat is considered second to none for eating, some Malays requiring the animal's throat to be cut, latecomers apparently stoutly asserting that it is a kind of fish.

Wherever the Dugong appears in numbers elsewhere it has been much hunted for profit, a beast of 5 cwt. providing about 10 gallons of an odourless, tasteless oil used as a substitute for cod liver oil; the hide may be used as leather and the meat is said to resemble beef when cooked. The eye is small and may, on capture of the animal, exude a clear mucous resembling tears, which in young animals is much valued as a love potion by Malays.

Sea Cows and Mermaids are synonymous with many people but it is not clear how the idea originated; considering the myth is found in many places far from the haunts of these animals, that the mythical being often lacked a "fish" tail and that the teats of a Dugong are situated under the armpits and not on any raised pectoral swelling resembling the human form, it is hard to see how this story has come about; the appearance in the sea of an ugly, upright, whiskery head about every three to five minutes does not come up to my expectations of a Siren and it seems more likely that Mermaids having already originated, the existing Sirenians were conveniently cited to convince the credulous of the truth of the stories.

As it depends for its food on a rocky, weedy bottom it is not common in all the coast parts of Sarawak, some of which are muddy, where the silt brought down by the rivers prevents marine plant

life; they may occasionally be seen off Tanjong Datu, or Kedurong Pt. and are said to be sometimes taken in the fish traps in the Limbang and Lawas District to the North. Both sight and hearing are said to be very keen and all one usually sees is a whiskery head surmounting an upright pair of shoulders rising out of the water at intervals.

They are usually seen singly but the female is said to be very solicitous both of its young and its mate.

ORDER III CETACEA.

(Whales, Dolphins & Porpoises).

Whales are no less Mammals because they happen to swim in the sea like most Fishes than are Bats who happen to fly in the air with most Birds; numerous anatomical features—of which the suckling of their young is a criterion—prove the Whales to be Mammals but their nearest relatives in this Class are still uncertain. By some it is held that they are anatomically nearest to a hypothetical Pro-Mammalia, something neither Reptilian nor yet quite Mammalian; others going by internal anatomy pick the Edentates—the extinct Sloths and the like—in the free-for-all hunt for cousins to the Cetacea, whilst a more reasonable (superficially) view is to connect them with the Carnivores, the Otter, Seal and Sea Elephant indicating the plasticity of the flesh-eaters towards an aquatic life; a certain amount of fossil material supports this school of thought. Disregarding the Sirenia or Sea Cows—equally cousinless—Whales are most often allied anatomically with the Ungulates, the Deer, Sheep, Oxen tribe and this is supported in an amazing way by blood precipitation tests; Anti-Cetacean serum gives 80% reaction with the Pig, 70% with the Deer but no reaction with Rhinos, Tapirs and Horses nor with the Carnivora.

The Cetacea may be divided into two groups, with and without teeth in an adult state. The latter constitute the “Whale-Bone” Whales, as a matter of fact in an embryo state sporting teeth and even hair; they obtain their food in a characteristic way, for by opening their enormous mouth a large quantity of sea water is enclosed together with a number of minute organisms, the largest being the “Sea Butterflies,” flattened, free swimming shell-less Snails: the mouthful of water is then expelled but rows of flexible “baleen” plates, hanging vertically along the edge of the mouth, strain this water causing all extraneous matter to remain behind entangled in the feathery edges and free ends of these plates. These minute particles form the food of the world's largest animals, Whales some 90 ft. long, whose gullet is yet too small for them to accomodate a decent sized Herring.

Of the toothed Whales, the Sperm Whale is the best known on account of its oil, ambergris and general sporting propensities, relying largely for its food on Cuttle Fish, Squids and the like. The Killer Whale is fairly well known, feeding on Fish, Seals and even other Whales, a number of Killers combining to force open the

victims mouth, for even a Whale must drown like any other Mammal if unable to breathe. In this respect all Cetacea must come to the surface at intervals to "blow," that is to expel the used air from their lungs and take in a fresh supply, the "spout" of a Whale being moisture condensed from its breath, together with the sea water in the neighbourhood of its nostrils, being blown up as spray; Porpoises and Dolphins blow so quickly that no spout is noticeable as in the slower Whales.

Lastly come the Porpoises and Dolphins, the latter with a long, projecting, toothed beak, the former with blunt rounded muzzles. Some Dolphins of the genus *Sotalia* are peculiar in that in China and the Amazon they live hundreds of miles up river and possibly never see the sea at all; a similar but estuarine species is found in Borneo.

Dolphins and Porpoises are but little prized by the natives for food or oil.

SUB-ORDER ODONTOCETAE.

(Dolphins, Porpoises, Killer & Sperm Whales).

***Delphinus malayanus* Less.**

THE MALAYAN DOLPHIN.

Not actually recorded from Borneo but doubtless occurring.

***Sotalia borneensis* Lydekker.**

THE WHITE DOLPHIN.

Several of this peculiar Dolphin have been taken at the mouth of the Sarawak River, fine animals some seven feet long with pure white glossy skins marbled with grey spots on the back, a pattern which may have given rise to the illusion of the Spotted Dolphin (*Steno*, *Delphinus* or even *Sotalia lentiginosus*) in Bornean waters.

This is the only Dolphin apparently recorded from these parts but the Malayan Common Dolphin (*Delphinus malayanus*) no doubt occurs; I believe it is a uniform ashy grey, rather lighter below.

The first specimen was taken by Mr. E. Hose near Tanjong Sipang and they have since been taken a mile or so up the Santubong branch of the Kuching River; they are said by the natives to only come inshore for breeding purposes.

I once (September) observed a shoal of about a dozen near Santubong, the pointed dorsal fin being rather conspicuous, their steel grey warship-like colour and leisurely movements being in striking contrast to the other two species which appear dark and are more lively as a rule.

***Orcaella brevirostris* Owen.**

THE LARGE INDIAN PORPOISE.

This is a large animal up to about 7 ft. of a dark slaty blue, almost black, colour with a very blunt rounded snout; it is often seen in rivers which it ascends with the tide.

We have the skin and skeleton of one from Buntal, distinguished by the small dorsal fin only an inch or more high but sufficient to differentiate it from other local Porpoises.

Phocaena (Neomeris) phocenoides Cuv.

THE SMALL INDIAN PORPOISE; Malay: *Lomba lomba*.

This ranges up to 4 or 5 ft. in length and is black in colour; it may occur in flocks, or often quite solitary and is more or less estuarine or littoral.

Though there is no dorsal fin there is a slight ridge towards the upper side of the tail. This is the commonest species and we have five from the mouths of the Sarawak River.

Orca gladiator Bonnat.

KILLER WHALE.

A specimen of this Whale was cast ashore at Miri and the skeleton preserved in the Sarawak Museum. The animal occurs at wide intervals in the Indian and Pacific Oceans.

It is said to have a very long upstanding pointed dorsal fin showing when swimming, whilst the formidable teeth and black and white colour serve to distinguish it.

Physeter macrocephalus L.

THE SPERM WHALE.

The hollow tooth of a Sperm Whale was used as a receptacle and as part of a bunch of charms formerly belonging to a Kayan and now in the Sarawak Museum. The origin of this tooth is of course unknown but no doubt obtained in the course of trade and it is not impossible that Sperm Whales occurred in Bornean waters for they have been known in the Straits of Malacca and of course in Japan.

SUB-ORDER MYSTACOCOETI.

(Right, Finner, Hump Back or Rhorqual Whales).

Balaenoptera schlegelii Flower.

FINNER OR RHORQUAL WHALE. Malay: *Ikan Paus*.

This is the Whale most often washed up, though even that is of rare occurrence. A monster 66 ft. long was washed up at Simatan and its skeleton, collected by Mr. Shelford, mounted near the Museum; it is said that six Malays were able to sit within the cavity of its mouth whilst at a later period all the Pigs, Crocodiles and Monitor Lizards for miles around gathered to feed off its stinking flesh. Shelford mentions that it should probably be called *B. musculus* Flower, the appearance of which is not surprising for it is probably conspecific with *B. australia*, such a source of profit in New Zealand waters during former times. Borneo has not been in any way connected with Whaling for though Whalers often passed it on their way to other grounds it was given a wide berth on account of pirates and for other reasons.

This is of course one of the Whale-Bone Whales; the colour is dark grey-blue above, white below, the dorsal fin large and high, the flippers relatively slender and small. From the chin to the middle of the belly are the usual longitudinal furrows, about 50 in number.

ORDER IV UNGULATA.

Many diverse looking Mammals are included in this Order but all are characterized by modification of teeth and stomach to their herbivorous habits. Giraffes, Pigs, Antelopes, Sheep, Goats, Elephants, Rhinoceros, Tapirs, Hippopotamus, Cows, Mouse Deer, Camels and Horses all go in this Order, which lends itself to unlimited sub-division though by no means all of the groups are found in the Oriental Region.

SUB-ORDER PROBOSCIDEA.

Nowadays everyone knows a certain amount about Elephants but as they have only a very local interest in Borneo it is hardly necessary to go into general details here.

Elephas indicus Cuv.

ASIATIC ELEPHANT. Malay: *Gajah*.

Bornean elephants are rather a problem, for whilst those of N. Borneo have most probably been introduced, there is in the Museum here part of a fossil molar tooth of an Indian Elephant taken from a crevice in the limestone near Bau in Upper Sarawak; the specimen consists of four and part of a fifth distal sections of the first of the two premolars in the upper jaw and indicates that Elephants existed sometime ago in parts of Borneo where there are at present no other traces of them.*

No recent information is available about the Elephants of N. Borneo but St. John records them in his well known book as being numerous in the neighbourhood of Cape Usang on the N. E. corner of Borneo, herds of 50 and 100 being mentioned and the tusks running up to 6 ft. in length. Their present distribution is not well defined but they do not come anywhere near Sarawak and have a suspiciously restricted range even in N. Borneo; sections of their tusks are often worn in the Lawas district as bangles and the Dayaks have a poor opinion of the Elephants fighting powers, for it is too clumsy to protect itself from a party of them armed with spears.

The origin of these Elephants is obscure and their first appearance is recorded by Pigafetti, chronicler to Magellan, who on the occasion of a visit to Brunei in 1521 mentions that they were conveyed to the palace on "captive elephants." Hunt visited the Sulu Islands in 1814 and found the elephants there to be neither useful nor ornamental, for whereas they had been formerly used as in Siam for religious purposes, a change in religion had left them

* Another fossil Elephant's tooth seems to have been sent home in 1864, but details are lacking; Gertrude Jacob "Rajah of Sarawak" Vol. II, p. 361.

unemployed, whence they developed into a nuisance. St. John's story is the most usually accepted one, that the E. India Co. (about 1750) presented the Sultan of Sulu with a herd of Elephants (though I don't know where his information came from); it was a tactless thing to present more elephants when they or their memory were already a burden to the Sulu Islands and it is not unreasonable to suppose that the Sultan diverted them to the nearest mainland with a sigh of relief. Their distribution bears this out, for they are confined to a comparatively small strip of N. Borneo in the neighbourhood of these islands; it has been objected that presuming only a few to have been given and let loose at first there is probably not sufficient time for these slow breeding animals to reach their alleged numbers but short of the ill effects of inbreeding one might imagine Borneo to be overrun with several million Elephants, if Darwin's classic estimate of their birth rate be correct.*

Borneo has of course been visited by many outside races, such as Javanese and Hindus, the last of whom may have used Elephants and certainly left behind a number of Elephant Gods—Ganesa—mostly in Dutch Borneo but on one occasion at Limbang in Sarawak. Parvathi is said to have accused Siva of infidelity and assaulted her; Ganesa their son, intervening on behalf of his mother, had his head cut off, whereupon Siva upbraided Parvathi, who called upon soldiers to cut off the head of the first animal they met to replace that of Ganesa: an Elephant was the first encountered and Ganesa was miraculously restored to life with its head.

The races of the Elephant are not very clear but the Malayan form has been separated as *E. m. hirsutus* on account of its general hairiness* and on other characters; similarly the Sumatran one has long been separated as being more slender generally, differing in skeleton and teeth and shape of ear, in longer and thinner trunk, more expanded tip of tail with longer and stronger bristles. How far these races can be upheld remains to be seen but it might be worth while for someone to make a detailed study of the Bornean Elephant to see which of the proposed races it more nearly resembles and in which it presumably has its origin.

Mastodon latidens Clift.

There was brought to Everett from the jungle near Brunei and forwarded to the Secretary of the Zoological Society a tooth assigned to this extinct species of Elephant; the specimen was the crown of the 3rd and last left upper molar, consisting of 5 transverse ridges and a "talon," the whole measuring 6.3 ins. long and 2.95 ins. wide at first ridge. Similar specimens are known from the Siwalik hills, from Burma and from Perim, but they are all a little larger suggesting that the Bornean tooth may belong to a dwarf race; it merges into other species recorded from Mindanao, Sumatra and Malacca.

* A conservative estimate of the offspring of a pair of Elephants attained nineteen million in about 700 years.

* I am informed that this is only a pathological character.

SUB-ORDER PERISSODACTYLA.

In spite of the rather fearsome looking name this sub-order is remarkable for containing Ungulate mammals with an uneven number of Toes and includes the Horses, Rhinos and Tapirs.

Family Equidae.

There are of course no feral horses in Borneo but Ponies of varying degrees of wildness are a prominent feature in some places, though beyond that they occur in many parts of the Archipelago their real origin appears to be uncertain. There are however two main stocks from which domestic horses have sprung, a Northern Mongolian and a Southern Arabian race, the skull of the former showing no trace of the depression corresponding to the pre-orbital tear pits (as found in Deer), the skull of the latter showing some such trace in a varying degree according to its interbreeding: more remarkable still, a slight depression in the skull of the Bornean pony indicates an infusion of Arab blood at some time in its ancestry, a conclusion also supported by the shape of its molar teeth.

Family Tapiridae.

The appearance of the Tapir is familiar to most people from pictures but whilst found in Malaya and Sumatra it is altogether absent from Borneo; another species is found in S. America and fossils have been found in France and Germany, and even in Suffolk.

In spite of repeated statements to the contrary, there has so far been no authentic record of a Bornean Tapir and though natives sometimes assert their presence their stories have so far never held water; a Sadong Malay described in correct detail to Everett the appearance of a Tapir he had killed in Dutch Borneo but the teeth he produced in evidence were those of a Rhinoceros.

Borneo is too well known for such an animal as a Tapir to have so far escaped notice though popular prejudice, both here and at home, is rather in favour of it; older natural histories usually included Borneo in its range and, stimulated by certain N. Bornean stamps, one fully expects to find them on first arriving in the country.

Family Rhinocerotidae.

Judging by the number of fossil forms throughout the world this must have been at one time a large and most successful Family; at present there are but two African and three Asiatic surviving species, one of the last occurring in Borneo.

The Indian form is an immense beast, the Javan one smaller, rather hairy and with one or sometimes no horn, the Sumatran and Bornean one being the smallest and most hairy of all, as well as possessing two horns. All three are distinguished from their African cousins by the presence of incisor teeth in the lower jaw and particularly in the "armour plating" effect caused by folds in the skin, one fold in the neck region, a very marked shoulder crease and a smaller one before the hind leg.

Our Rhinoceros resembles more than anything an enormous pig about 4 ft. high and 8 ft. long, usually quite black but sometimes greyish as in the Javan species and with a lot of stiffish hairs standing out, sometimes all over it but forming tufts on the ears and tail; the skin is very thick, as much as half an inch in some parts and with three well marked folds in neck, shoulder and hind quarters. This Rhinoceros always has two horns and occurs in Sumatra, Malaya, Burma, Assam and Siam and is not to be confused with the single horned Javan Rhinoceros of Java, Sumatra and Malaya; in some females of the latter the horn is I believe occasionally absent but the Sumatran Rhinoceros may be at once distinguished from the Javan one by having only one pair of lower incisor teeth instead of two pairs, a point worth bearing in mind as it is still a little uncertain if both do not occur in Borneo.

Rhinoceros (*Ceratorhinus*) *sumatranus* Raffl.

THE SUMATRAN RHINOCEROS. Malay: *Badak*; Iban: *Schimarau*; Murut: *Tembaiungan*; Tagal: *Camansur*; Dusun: *Tampak*.

The Rhinoceros in Borneo is the smallest of all in size and is by no means a prepossessing animal, though as I shall have occasion to mention later it is one of the most popular among the natives. It is usually a solitary, wary and inoffensive beast, though several have at times been recorded together; owing to persecution it has become most retiring and if it suspects men on its trail may leave the neighbourhood for another as much as two or three days distant. It much prefers to run rather than fight though from all accounts can put up a good show when wounded and cornered. curiously enough rushing upon its enemies open mouthed and attempting to bite with its sharp chisel-like incisor teeth rather than using its horn.

It is a browser, feeding on twigs and leaves, knocking down small saplings, making a great noise about its feeding and leaving a broad path of broken trees and trampled undergrowth; it is not particular about what sort of country it inhabits, being found from the tops of mountains down on to the plains though as these are more likely inhabited and cultivated it is much less often found there. They are said to be fond of a muddy bath by the river side and I have seen the tracks where they and many pigs wallowed in the hollows of a mountain ridge.

It is hard to give any exact localities but they occur in the mountainous region in the Lawas interior, various places in the far interior of the Baram and Rejang Rivers, occasionally straying as far down as the Ulus of Mukah and Oya but is not found on the left bank of the Rejang or down into Saribas and Sarawak proper. In fact it is a most unsatisfactory animal to look for, there is no very certain locality but it is sure to be a long way from houses so that it requires some trouble to get in its neighbourhood and it may be several days on short rations if one is to follow the animal up to a finish.

Rhinoceros horn is greatly valued by the Chinese for making medicine and commands an immense price; the longest horn in the Museum measures I think 19 ins. but though they are not usually as long as this a dead Rhinoceros may be converted into as much as \$2—300. In fact since Dayaks and others no longer take heads and there is a certain amount of safety in penetrating the interior, parties of them in the off-season when their padi farms don't require attention move away for a few months and combine pleasure with profit in Rhinoceros hunting. In many parts frequented by the Rhinoceros there are no settled houses or villages but small bands of natives such as Punans and Ukits roam about living on what they shoot, cultivating no crops, making no permanent houses and of course fully aware of the value of a Rhinoceros. Now there can at the moment be no fear of Rhinoceros becoming scarce for as many as 36 trophies were brought into Belaga in two years not so long ago and I have met men who have claimed to have shot over 30 in the course of their life time, but it must be evident that such a slow breeding animal cannot stand destruction for long at this rate so that the matter will one day have to be attended to. The wandering Punan or Ukit, armed with a blow-pipe and inhabiting the same country as the Rhino has surely every right to shoot if he wants to as his forefathers used to do and anyway it would be impossible to control him in this as it is in many other matters; the Dayak out for a holiday and to make some money as well is probably the chief destroyer, for he owns a breech loading twelve bore with buckshot and is thus much better equipped, though a recent Order which I shall refer to later has deprived him of much of this advantage.

Reserves so successfully made in other countries are impossible to enforce here owing to the remoteness of the animal's haunts, the presence of these wandering tribes and it must be admitted to the inconstant nature of the Rhino itself. In India I believe female Rhinoceros are preserved but it would be just as difficult for a native to follow the rule here as it now is for him to keep within the present Order that no Rhino with a horn of less than 4 ins. may be shot; they are preserved altogether in N. Borneo but it would be a more popular move here, no less effective, to suppress the demand for its horn among the Chinese. Fortunately the Rhinoceros has been helped indirectly in another way for it seems to have been evident that breech loading 12 bores were becoming more numerous in the country than was consistent with safety and in future only muzzle loading guns are to be sold,* the inferiority of the weapon and difficulty of obtaining powder will be in the Rhino's favour, whilst the present cheap American 12 bores cannot be expected to last very long.

There are a few odd points of interest about the animal; it is said to always deposit its excrement in the same spot and natives by patiently watching its "jamban" sometimes shoot a specimen;

* This has most unfortunately not come into force.

other natives deny this and aver that having deposited its excrement in a stream it turns round and eats the stupefied fish that come to the surface. The male organ is most peculiar as it has an indication of the cross-bar or "palang," as artificially inserted by such tribes as the Kayans, Kenyahs and some Dayaks. Rhinoceros are said to snore loudly when asleep and thus sometimes betray themselves to hunters.

Fossil teeth have been recorded from Sarawak from a depth of as much as 60 ft. at Paku in Upper Sarawak, where the animal is of course now unknown alive; it is amusing to recall that the teeth were assigned to *R. sondaicus* and the bones associated with them to the present species, *R. sumatrensis*.

SUB-ORDER ARTIODACTYLA.

(The Even Toed Ungulates).

This is at present the most successful Ungulate group and is distributed all over the world, including all the Cattle, Antelopes, Deer, Pigs and remaining Ruminants.

Group I

Family Suidae.

The Pigs (with the Hippopotamus who hardly concerns us here) are distinguished from the rest of the Artiodactyla by the cusps of their molar teeth, which retain a more or less primitive, conical or pyramidal shape (known as "Bunodont") whilst the cusps of the molars of Sheep, Deer and Oxen are modified into crescentic ridges (known as "Selenodont").

Pigs reach their maximum development in Africa and the East though of course extending into Europe, most of them remarkable for one or more warty protruberances on the face. The origin of domestic Pigs has never been settled though it is more than probable that some "wild" Pigs are strays, which may perhaps account for some of the unexpected "species" that turn up in Borneo and elsewhere.

Sus barbatus barbatus Mull.

THE BEARDED PIG. Malay: *Babi Utan*; Dayak: *Jani*; Tagal: *Ulak*; Murut: *Basing* (?); Dusun: *Bakass*; *Ugok* (Domestic); Barawan: *Bikuoi tanah*; Bintulu & Kalabit: *Bakah*; Miri: *San*; Kayan: *Babui*.

The Bearded Pig is found in Sumatra, rarely in the Malay Peninsula and some islands but is very common in Borneo where so far it is the only species really known, though some others have been doubtfully recorded. The British Museum has an undoubted skull of the Javan Wart Hog (*S. verrucosus*), taken by Wallace in the Upper Sadong, but it is possible that Wallace mixed this and others of his specimens as regards localities and the animal has never been taken again; I believe the same skull, which is of course ever so much shorter in the snout than any *barbatus* skull, was later attributed to the Bornean form of *S. celebensis*, a varied

career for a skull which may well have not come from Borneo at all. Another mythical Bornean Pig is *S. longirostris* Nehring, resting on a single specimen killed by Grabowsky near the Kuala Kapuas, very large, dark haired and with *two* wart like skin-folds on the face, supposed to at once differentiate it from other pigs taken at the same time; it has however been since relegated to an ordinary Bearded Pig. *Sus gargantua* is another supposed Pig; the skull some three inches longer than any known *barbatus* skull but there is a good deal of mystery about the animal itself, especially as the only other known specimen is but doubtfully recorded from Java.

Anyone shooting a number of Pigs in different stages of growth might easily think there were several kinds. Very old boars are quite chalky white, even to the tuft of hairs on the movable pair of warts situated on the upper surface of the snout over the tushes; slightly younger specimens are more yellowish and have a darker patch of bristles on the snout by which they may be recognized at a distance. Half grown specimens in which the testes have not descended (they are not very prominent in adults, just a slight swelling with a groove) are like the sows and are quite unlike the adult boars; young boars are usually a dark grey with a whorl of hairs on the snout where the warts are going to appear, this whorl being whitish strongly contrasting with the rather dark black of the muzzle. Sows are a rather lighter grey with a pink nose, black muzzle and a whitish whorl over the short tushes, where the wart does not of course grow to any size; there are a number of whitish hairs on the cheeks and usually a well marked patch on the crown, the long bristles* down the ridged back varying from dark to light yellowish compared with the grey flanks, the whole suggesting to a varying extent a white crown spot and dorsal stripe. The stockings and tail are a darker brown; the iris is white but much duller in young animals.

Sucking pigs appear to be dark brown with three narrow longitudinal yellow ochre stripes along the flanks and traces of fourth and fifth stripes near the elbow joint; striped house piglets are rare in Borneo—in fact I've only seen but one and that had much broader, lighter, whitish yellow stripes not particularly like the wild ones. Both striped and plain ones occur together in domestic litters and it is said in wild ones also. The young are usually born about January and may be seen up to July.

Pigs are subjected to irregular migrations, seeming to follow the fruit when in season so that one year a particular spot may swarm with them but not be troubled again for many years after. The actual individuals are not met in more than twos and threes until it comes to swimming across rivers when there may be anything from 30-300: the aborigines wait all day in favoured spots on the river for "babi sebrang," as they can be caught in the water

* These constitute the Pig's "bristles" of commerce.

and held until a blow on the nose with a stick finishes them off. They swim well but low in the water, just the snout and crown showing and though they don't sink when hit, ones bullets seem to ricochet off the water and one might as well wait for them to come to land. In the evenings upriver it is a common sight to see them loafing about on shingle banks before crossing and as a rule they choose a shallowish place where the noise of the running water as a matter of fact enables one to get fairly close to them in a boat: downriver they are said to cross more frequently just after it has rained, though I don't know how much truth there is in this.

Droves of Pigs are a nuisance, in fact are vermin, destroying crops, rooting up roads, in remote parts taking little notice of shots and are said to have been killed with a "parang." Now that heads are no longer taken, Pigs are the main object of a hunt, by no means a tame one for wounded boars may charge home, grunting and chocking their tusks and I knew one man who was upset and killed in such an encounter, accidents to arms and legs being not unusual. They are of course much hunted with dogs which are most clever in circling round the beast at bay and engaging its attention until someone comes up but it is a strenuous and not always successful pastime; except on river banks pigs are most often seen in coastal areas of an early morning as they move up from the sea shore to rest on the mountain sides during the heat of the day: in the jungle itself the aborigine is an adept at hearing pigs some way off, when a cautious approach and a short wait generally gives an opportunity for a shot. Most often one hears two or three farm-yard like grunts which put one on the "qui vive" but are really I believe notes of alarm, for one seldom sees the beast on these occasions. The clicking of their tusks may sometimes be heard as they are feeding. Sows with young may be found feeding at all times for they must have a hard job to keep their family of seven or eight going; they range through any kind of jungle from the beach to mountain tops at 7000 ft. on Mt. Murud, rooting in the ground, tearing open rotten logs, picking up fruit, gnawing roots and consuming any carrion handy, the last a trait taken advantage of by the Davak: a bit of offal is hung in the jungle until it is "ripe" and the hunter keeps an eye on it of an evening until a pig succumbs to the attraction. They are also very fond of a mud bath in hot weather and seen to use the same place daily which lays them open to a visit from a Dayak. Their greatest enemies are crocodiles and perhaps even more so the Punans, nomad hunters who keep the Pigs on the move by hanging about the rear of a migration, at such times killing immense numbers and eating themselves into a stupor, from which they emerge for a further orgy or hastily to kill another one if the last is finished. The most successful trap was the "blatik," a sharp bambo spike released by the pig into his own flank as he walks

along the path but that is now barred owing to so many human accidents; the "jaring," or row of nooses, is sometimes used and a not unknown ruse is to leave a gap in the fence round the padi fields—a pit with sharp spikes is sunk just beyond this gap and Pigs often impale themselves in their eagerness.

Except in the open on river banks Pigs are most often encountered in thick jungle and detect the hunter before he is aware of them; the Pig however is a good citizen and warns his neighbours either by a grunt, by "chocking" his tusches or striking them against a tree, producing a definite but often un-pig-like noise: every Pig is then on the alert and the hunter needs to remain quite still even up to two or three minutes for a clear shot, his slightest movement sending the whole lot scurrying away.

The wild pig is not infrequently tamed by the Punans but the domestic house pig is a different species, probably obtained by trade from non-Islamic coastal peoples; wild and house Pigs fight on meeting and wild boars sometimes make a good thing by snapping up a tame litter of young ones. A pig's nest in old jungle or "jerami" consists of a bundle of leaves on which it is said to sleep but it is on the whole a spot to avoid on account of the numerous ticks left behind.

Boars on the whole are heavier than sows though they may both attain maximum weight; some sows in fact may get thin and mangy, even assuming the much longer lower tusches characteristic of the boar: the tusches are longer in the boar, our longest (lower jaw) measuring $8\frac{1}{2}$ ins. along the outside curve whereas those of *Sus cristatus* of India may go up to $10\frac{1}{2}$ ins. or more.

For the benefit of sportsmen I may mention that the Javan Wart Hog (*Sus verrucosus*) has two pairs of warts on its face, one projecting below the eyes and the other above the tusches; it is I believe uniformly coloured in all stages of its growth. *Sus vittatus* also of Java has a collar formed by a white streak running from the face to the sides of the neck, its young having the usual longitudinal body stripes and it would be of immense interest to know if both striped and unstriped piglets do really occur wild in Borneo.

Group II Ruminantia.

Tragulina.

This comprises the Mouse Deer of West Africa and the Oriental Region, hornless and most aberrant little animals in appearance and anatomy. The stomach has only three compartments instead of four as in Deer and they have four toes as in Pigs (only two of which of course reach the ground) but the metacarpals—the shank bones—are fused as in Deer, so that in many characters they are intermediate between these and Pigs.

For the rest they chew the cud like other Ruminants and the males are remarkable for their curved, protruding canine teeth pointing downwards from the upper jaw. Their present distribution is peculiar but further complicated by the existence of fossil forms found in France.

Tragulus kanchil hosei Bonh. (Plate XI).

THE SMALL MOUSE-DEER. Malay: *Pelandok*; Iban: *P. tampin*; Sennah: *P. Pipin*; Dusun: *Belabagan*.

This is the smaller of the two mouse Deer found in Borneo and is about the size of a Rabbit, a warm buffish brown with a darker sometimes almost black back, black nape stripe, the under-side white with some buffish markings; on the white throat is a dark brown V shaped marking, the point forward and the two arms sometimes separated there. The face is rather pointed, the ears short, the feet very elongated and furnished each with two small hooves; the tail short and white underneath.

In appearance this and the next species are rather similar, head held rather low, back arched, stern rounded and the little tail not just held down but actually tucked away under the belly when the animal runs along, in fact in ordinary circumstances the white of the underside of the tail is only seen when the animal is relieving itself. They usually sit down stern first, may even assume a truly rabbit-like form and remain sitting on their haunches; they usually squat just like a rabbit, head drawn well in but fore feet tucked under the body as well, it being always a matter of surprise how both Sambhur and Mouse Deer regain their feet and dash off at less than a moments notice from a lying down position, with their long, and one would think breakable legs helplessly tucked away under the body. When walking a Plandok's legs almost seem to twinkle so quickly does step succeed step, the whole an example of most exquisite daintiness; the forefeet are bent forward rather markedly at the knee and one foreleg may stiffen and paw the ground when in doubt just as do the Sambhur Deer. They have no particular turn of speed out in the open but in jungle they show a most uncanny faculty of clearing fallen logs in their stride, dodging right or left round small trees, squeezing between fallen branches all without hesitating or checking speed for a moment, a faculty which takes them out of sight in no time and right away from ordinary dogs which would catch them in a few minutes out in the open.

Pelandok are usually found solitary, occasionally in pairs and in inhabited districts are so quite, unobtrusive and wholly nocturnal that they live quite unsuspected, visiting with impunity gardens of houses in the middle of Kuching; they are not very often seen at any time and surprisingly little is known of them. Two things contribute to the undoing of the Pelandok these days, firstly the use of Reflector lamps, for one has only to steal along the river bank in a boat during the earlier hours of the night to see quite a number of Mouse Deer and other animals down for a drink. The other factor is the Dayak snares or "Panjok:" a line of brushwood a couple of feet high extends through the jungle for a hundred yards or so with a gap complete with snare set about every 10 yards: now the Pelandok can jump as high as two or three feet or even climb

a sloping branch but on meeting this line of brushwood it promptly seeks an opening and is caught by the foot. Such Mouse Deer are seldom much use to keep alive as the foot is usually a braded, twisted or even broken; care is needed in taking them out of the snare alive for the males, with a downward and sideways movement of the head, can inflict a bad wound with their sharp canine teeth. Though such a dainty looking animal they are not particularly good to eat, the meat being coarse; they are not difficult to keep in captivity if uninjured and soon become tame, making the most dainty pets. They seem to eat most fruits and readily take bananas though their favourite food is the fruits and particularly the flowers of "Bua simpo;" they also root around in the grass on the lawns and find something they are fond of in the ground. They swim well and drink frequently, seem to feel the heat a good deal and sit panting with the mouth open or even lie on their side instead of squatting; they "chew the cud" just like other Ruminants and appear to have temporary pouches in the cheeks which bulge out when they are feeding on anything large like bananas. They make very little noise, in fact it is only if one bends down close that one can sometimes hear a very faint whistling, bubbling noise going on, almost like a Canary but ever so faint. They are said to communicate with each other by tapping on the ground, I believe with their hind legs, and are sometimes decoyed by someone making a similar sound with a leaf on a stick.

To the Malays the Pelandok takes the place of our Brer Rabbit and at times Reynard the Fox; the stories of his cunning, mostly successful if not always creditable, belong more properly to Peninsular Malays and as they have merely been copied over here, this is perhaps hardly the place to repeat them.

As far as I know the Pelandok only has one young at a time usually about December or January,* the fawn being unspotted at birth and rather brightly marked.

Two forms are said to occur, *hosei* in Baram and to the North, *longipes* in the Kuching area and to the S. W., where they are supposed to have longer hind legs but measurements of our specimens do not so far confirm this.

Tragulus javanicus borneanus Miller.

THE LARGE MOUSE-DEER. Malay: *Pelandok napu*; Iban: *Kamaya Panas*.

This is the larger of the two Bornean Mouse-Deer and is about the size of a small Hare and not unlike it in colour; the back is a light buff colour, sometimes more rufous, sometimes more blackish with a darker patch on the top of the head and nape of the neck. The flanks are usually greyish and the underside more or less white; on the underside of the white throat is a dark brown "V" shaped patch with the point forward, the whole rather irregular in shape, the white inside the V sometimes separating the

* One foetus about 2" long in July.

two arms at their normal point of junction. An almost but not quite constant feature differentiating it from the other species is the suggestion of a second V in front of the first, there being no trace of such a V in its smaller relative; the white of the throat encroaches on the buff of the neck on both sides to give the appearance of an incipient V shaped marking.

As far as I know there is little difference in their habits though the two may be shot together on the same night, as I have seen in the Pelagus Rapids; for some reason this larger form has never been taken round Kuching, though as it occurs in the Sadong district it has no doubt occurred in the neighbouring Sarawak River and not been recorded.*

Something like the Barking Deer, the Large Pelandok prefers hills, high or low, to swamps which perhaps accounts for its absence in many parts such as around Kuching. Seen wild it is the usual dilatory Mouse Deer, walking along "muttering" to itself without being particularly wary; in captivity even after a long time it never became as tame as the other species. A female pursued by dogs took to the sea and was captured; this was on the first of September and having lived amicably with the smaller species a young one was born just before Xmas, like its mother only darker, which gives about 4 months at least as the period of gestation. Both old and young thrive without any difficulty.

It is this form I believe which is numbered among the Dayak Omen animals and they set considerable store on its behaviour as an augury, a Pelandok running across the path or calling from right or left may be sufficient to hold up an expedition; Kayans will not eat either species, which are therefore the more common in that part of the country.

C. Pecora.

A marked feature of the Pecora is the possession of paired horns and their nature is much the same in spite of diverse external appearances. There is in the Bovidae (Oxen, Antelopes etc.) a hollow, bony, core sheathed in a hard cornified layer; the last represents a modified epidermis or skin, the former a special bone, the "Os Cornu," which in the young can still be distinguished as separate from the frontal bone. In the Giraffe this "Os Cornu" is covered with the ordinary hairy skin, in the male Okapi the tip just breaks through, whilst in the Deer this bone is covered by a thick and very vascular skin—the "velvet"—which is periodically shed and leaves the spectacle of bony mesoblastic tissue exposed to the air and happily for its owner no longer sensitive. With the exception of Rhinoceros horn (which is but a number of stiff hairs cemented together) all horns consist of a special bony core, the covering of which when present varies from ordinary hairy skin to a temporary blood vascular integument or to a permanent hard cornified layer.

* Since taken on T. Datu.

The Pecora are mostly of a fair size and offer the chief prey of carnivorous animals; for these reasons they have been required to obtain a comparatively large amount of green food in as short a time as consistent with safety and have developed a complicated, four chambered stomach, by means of which they are able to regurgitate the raw food they have swallowed and further masticate it at their leisure—the familiar operation of “chewing the cud.”

Family Cervidae.

Represented in Borneo by the Sambhur and the Barking Deer the most salient feature of the Family is the possession of bony uncovered horns on the lines just described. Horns are of course absent in the females and are very variable among the males, no two being quite alike, startling disfigurements occurring as accidents. It is I believe customary to estimate to some extent the age of Red Deer by the number of tines, a point being added for each years growth at any rate up to the animals prime: the Bornean Sambhur normally has but a brow tine and a fork to the beam though I am neither clear as to the intermediate stages nor certain of the time taken to mature, captives being deceptive in this respect.

Barking Deer for some reason often get their horns mixed up either by accident or not infrequently correlated with an internal injury or growth.

Muntiacus muntjac rubidus * Lyon.

BARKING DEER; Malay & Iban: *Kijang*; Kayan & Punan: *Telaauh*;

The Bornean Barking Deer is the reddest one there is and has been supposed to occur in two shades, one a bright chestnut with the hind legs even more so and the other (*pleiharicus*) a more uniform light russet colour, often with a trace of a darker stripe down the back; besides skull differences the latter is said to have shorter pedicels and horns and no burr or curl to their tips but these characters are as variable here as elsewhere; chestnut and russet forms have in many places been taken together so that colour and horn differences must be regarded as variations due to age or season.

Barking Deer are very common on mountains and even on quite small hills, seldom if ever having much to do with plains; in some districts their harsh bark—more like the roar of the Bear than the bark of a dog—may be heard at any time of the day, uttered alike by male and female, sometimes even two and three consecutive barks. Many Dayaks and all Kayans and Kenyahs will not eat Kijang, though they will kill it for someone else, whilst many Malay and some Dayak dogs even will not hunt or bark at them, having been thus trained for many years; they are sometimes decoyed by the noise made by blowing into a thin bamboo split lengthways for about 6—8 ins.

* *pleiharicus* as a name has priority, *rubidus* suitability.

Perhaps on account of their immunity Kijang are one of the few notable diurnal animals, being also of course on the move at nights; though visiting cultivation for feeding purposes they are essentially animals of the old jungle and it is not uncommon to find where they have brushed aside the leaves with their forefeet in search of food, leaving a small bare patch on the floor of the jungle. Similarly they clear a larger space under some overhanging leaves on a hillside where they lie up and whilst by no means gregarious it is usual to find them in pairs. To see in the jungle they resemble a very large foxy red "Plandok" or Mouse Deer, the head carried low, back arched, stern very rounded, usual white scut and comparatively rather short hooved legs. The males have small horns mounted on curious bony pedicels which reach as ridges right down the face to the eyes and give the animal a peculiar appearance; the horns are sometimes used in defence but the long canine teeth hanging from the upper jaw of the male are useful, for they are sharp-pointed, curved and bladed, in one case at least having been capable of severely injuring a man's forearm. These teeth are further peculiar in that as they have nothing to rub against they do not have persistently growing roots to replace what is worn away, as do the teeth and tusks of many other animals.

Kijang on the whole take life very easily and move about most leisurely though when pressed they can be very swift and are expert jumpers: they also swim well and are not at all afraid to take to the sea. They have but one young at a time, usually about December or January; the pretty little fawn has two rows of sometimes almost continuous white spots down the back and two or more irregular rows on each flank. Adults are said to pair in January or February, bucks shedding their horns about May and renewing them in August though it is doubtful if the shedding is annual.

The Barking Deer is an omen animal among the Kayans, who prefer to hear it call on the right as they proceed.

Until the necessity arose of finding out about Kijang I knew very little of their habits and then endeavoured to catch one alive in a "jaring," the long row of overlapping snares which Malays suspended in the jungle and against which they endeavoured to drive the Barking Deer. Whilst the nature of the "aris" or thick rotan from which the snares were suspended was of little importance the snares themselves were about 18 ins. in diameter and set with their bottom about 6—8 ins. off the ground, each snare being made of two twisted strands of thin "rotan jangut." The ends were firmly fastened, the rest of the "jaring" only lightly suspended and easily carried away as soon as a noose closed round the Kijang's neck, for the animal struggled violently and broke out if the rotans did not otherwise give way; for this reason it was most necessary that the "jaring" should pass behind any trees or saplings which would otherwise prevent its easy removal. The total length of

the "jaring" was about 100 yards and 10 men driving for an hour or two proved quite sufficient, dogs that would hunt Kijang being by no means essential. A few men stationed themselves some 10 yards or more in front of the "jaring" and by shouting at the Kijang after it had passed them tried to startle the animal straight into the nooses: Kijang when startled put their head down and stern up so that the animal often passed underneath the snares; cut brushwood appropriately laid prevented this and the snares had to be set lower when driving up hill and higher when driving down hill to stop the animal.

***Rusa unicolor equinus* Cuv.**

THE SAMBHUR. Malay: *Rusa*; Various people: *Paiau*; Murut, Tagal & Dusun: *Tembang*.

The Bornean Deer is a big umber brown beast, sometimes almost blackish, ears very large, tail very bushy and antlers quite simple, just a brow tine, no bez or trez but a fork at the end of the beam; there are possibly two species distinguished by the size of these antlers though as one can with care select a series of antlers intermediate in size between the two extremes the two species are not well founded. Usually over most of Sarawak antlers measure 20 ins. or more and about 5 or 6 ins. in circumference just above the brow tine but there occur in the Baram River perfect horns old and worn which scarcely measure 12 ins. to 15 ins. in length and some 3 or 4 ins. in circumference: as noted many tribes there will not have a deer horn in the house but some houses have nothing but these small horns, none of the large sort at all. I have remarked it is just possible to pick out certain aged specimens intermediate in length and thickness and the whole question is very likely complicated by the introduction of the Javan Deer, specially imported into parts of Dutch Borneo for sporting purposes: this Javanese animal (*C. hippelaphus*) is mainly distinguished by the thinness of its horns and one sees pairs of antlers which one might freely attribute to this species if one did not take into account the variability between the two extremes mentioned above. It happens that Hose distinguished a deer from Mt. Dulit as *C. brookei*, stating that the spotted fawn had a deep black chest and tail, the sides and rump a brilliant rufous, a form which Bartlett also recorded from Kuching: it is hardly possible to separate *C. brookei* on the character just recounted but the name might well be applied to the small antlered species if ever considered sufficiently distinct.

Horns are very variable in shape and often have supernumary tines, of which I have seen as many as eight in all on one beam; these extra tines vary in length and position, a sort of palmated antler being sometimes recorded. "Paiau lan" and "P. ang" are sometimes distinguished as large and small varieties by the natives. "Rusa ubi" and "belud" being used in some parts, the latter applying particularly to the short horned species.

23 ins. is the longest Bornean horn, * recorded by Roland Ward whereas they may reach 35 ins. in Ceylon and as much as 50 ins. in India; they only attain about 7 ins. in circumference, which is less than their neighbours. As noted the antlers have a brow tine, no bez or trez and just a simple fork at the end of the beam † differing in this respect from the European Red Deer (*Cervus elephas*), as well as in colour, structure, absence of light coloured rump patch, long ears and tail and any marked seasonal difference; the Sambhur is not therefore an Eastern representative of the Red Deer, whose place is in India probably taken by the Asiatic Wapiti (*C. cashmiriensis*). It is further most likely that the Sambhur, as in India, does not shed its horns regularly every year, for many pairs of antlers exhibit an amount of wear not easily acquired in a comparatively short time and occasional individuals who have become prominent in some way have been noted with the same horns for considerably over that period. Whilst on the subject of antlers I may mention that no two are exactly alike and many curious aberrations occur more or less valued by the natives as charms; the Kalabits go one better and keep captive deer in low roofed cages to obtain the prized malformations.

Deer are common all over Sarawak though remarkably wary in cultivated districts, where their depredations on young rubber or padi make them little short of vermin; the Kayan country to the North is remarkable, for this tribe will not eat the meat and deer are consequently so numerous that I have heard of as many as twelve being shot in a night. In the Sadong River certain Land Dayaks have a similar "tabu" and deer may occur there in droves of a dozen or more, for there are a number of temporary lakes which in the hot season dry up to leave a level plain of grass on which the Deer love to feed. Deer are usually solitary or in twos or threes and may be hunted with dogs but the more usual practice these days is to go out with a reflector lamp during the night and loose off with buckshot at every pair of eyes that show up; in remote districts deer will come up to examine the lamp but others are much more wary. The jungle being continuous one never shoots at a distance of more than about 25 yards but it is astonishing how Deer will carry on after being badly hit; a Malay of mine once fired at a Deer's head showing round a bush and, having laid his gun aside, was about to cut the fallen animal's throat when the Deer disappeared round the next bush almost as if nothing had happened and was never recovered. It is an inoffensive animal as a rule, though does will defend themselves with their fore-hooves when bayed by dogs and bucks will occasionally use their horns

† There is a 25 inch pair in the Lundu Fort but details are lacking.

* Bornean Sambhur are said to differ from Indian ones in that the upper tine never attains the same length as the tip of the main beam but antlers are so variable it would be unwise to place any reliance on this character though it is in the main true.

even against men: * the usual procedure in captives is to advance head down until the tip of the horn meets an obstruction when with a sideways jerk of the head the point penetrates to make a nasty wound. The rutting season is said to be about August and conflicts between stags have been occasionally recorded but we have horns in velvet in December (1) April (3) and May (1) and fawns in May and September so there is a good deal of irregularity particularly if as suggested before antlers are not shed annually. Bucks can be aggressive when rutting and are an unpleasant sight; they seem to inflate the inner skin of the "tear pits" to stand out like a ping-pong ball in front of each eye, a most ludicrous performance as it comes and goes. Twins have been recorded for the Red Deer but they are of course always rare in ruminants; "Siamese" twins with their sacra apposed were taken from a doe shot by some Kayans in the Baram River and the specimens are preserved in the Museum here; "stones," consisting apparently of an agglomeration of hairs are also sometimes taken from the stomach.

Deer are in some ways great wanderers though it is not at all unlikely that they have a certain territorial instinct, certain patches of jungle often holding the same animal for a period of well over a year. They have been recorded by Haviland from as high as 10,000 ft. on Kinabalu and occur all over the lowlands, even on certain islands such as Satang and Little Satang more than 3 miles out to sea, which have no doubt been reached by way of certain islets marking a former land connection.

Fossil deer teeth have been found in caves in Upper Sarawak and a few of the specimens are in the Museum; some were so large as to suggest a different species but there is not enough material to warrant this assumption.

In appearance the general shagginess of the coat, the small head, very big ears, comparatively heavy body but thin legs and particularly the bushy tail attract attention. The usual noise made is a plaintive bleat, rather high pitched and from which I believe it gets its name "Piau." It is a curious feature that Bornean deer almost all have a whorl on the underside of the neck, about half way up, this area may be partly denuded of hair and the skin red and inflamed, whether by rubbing (as in the Wild Ox) or for what other reason is so far unknown: "Sore neck" is not so marked here as it would appear to be elsewhere and I have not noticed the skin of this area to be broken. Their food is mainly obtained by browsing among young leaves and shoots but they show a surprising zest for strange food in captivity; one may see them sometimes standing almost upright on their hind legs and even moving a few steps to crop the higher leaves, the forelegs meanwhile hanging by the sides. When alarmed the forelegs are held quite

* Deer normally have no gall bladder but it is said to be very rarely present and render its owner particularly brave and aggressive.

stiff at the knees and stamped a few times either by way of intimidation or warning; in common with the Mouse Deer the forelegs seem to be bent a little forward at the "knee" joint. Like the Pig, Deer sometimes make a "nest" of grasses and small branches on which they lie at night.

Elsewhere I believe rutting takes place about August, the horns are shed about March and the young born about June or July: captive herds have fawns and shed their antlers at irregular times but I have no information about wild ones. We have two full sized horns still in velvet and both taken in March, another buck shot in September had the antlers showing as just short black nobly spikes—in fact as there is not much doubt that all stags do not shed their antlers annually, the rutting and shedding season are equally sure to be irregular.

Family Bovidae.

These are the hollow horned Ruminants, the bony "os cornu" being covered by a smooth cornified sheath in the manner I have described; the horns are permanent and never shed, though a relative—the Prongbuck of America—sheds this outer sheath when a new one is ready below.

In Borneo the Family is represented by the Water Buffalo, who is probably an intruder, and by the wild Ox; this latter is a most remarkable animal in that the horns of the cow are straight goat-like spikes whilst those of the bull have the usual curl and in-pointing tips of most Wild Oxen. The sexes of other Oxen and all Buffaloes have similar shaped horns though they may differ as to length and thickness but the condition in the species of Wild Ox found here is considered extremely primitive and allied to certain fossil forms.

Bos sondaicus lowi Lydd.

THE BANTENG. Malay: *Sapi* or *Lembu Utan*, *Temadai*; Iban: *Kleho*; Tagal: *Besalong*; Dusun: *Tampak*; Kayan & Kenyah: *Kalasin*.

This Wild Ox is probably the most attractive game animal of the country for Europeans but its appearance and habits are so little known that a detailed description is here given.

The shape is very thickset or stocky, with fairly massive forequarters and comparatively narrow hind quarters; the abdomen is very rounded and distended, the hump low, not extensive but well defined and similar in both sexes; it is nothing like the massive form of the Gaur, with only a trace of the massive ridge on the withers.

In the bull the hair is very short except on the abdomen, tail, and inside the ears, rather longer in the Cow, reaching a fair length on hind quarters and abdomen. General colour of bull jet glossy black, cheeks, junction of fore and hind quarters with body and a small patch on rump just at base of the tail chocolate brown; feet to just above knees and hocks dirty white with a greenish tinge (may be due to living on marshy ground), the junction with

the dark chocolate brown hairs being irregular, a number of white hairs occurring amongst the brown. Perineum and abdomen dirty white. A pure white patch unconnected with the white of the hind legs appears on the hind quarters, sharply defined anteriorly, not oval in shape but changing direction at an obtuse angled turn: posteriorly and ventrally it shades off into dirty white or chocolate brown, nowhere reaching the root of the tail.* A thin black dorsal stripe is noticeable on the chocolate brown of the rump in front of the white patch. The root of the tail is covered with short brown hairs, becoming longer, coarser and blacker down the tail ending in a tuft just below the hocks, hooves black, ears dark grey, dirty white inside with some long yellowish-white hairs; nose dark greenish; colour of the iris not noted for the eye glazes in less than a minute. Between horns hairless, skin encrusted and dark grey; horns black, dark greyish at base; length measured on outside of curve 16.3 ins. circumference at base 10.4 ins., between tips 5.4 ins.; all these measurements taken on the dry skull some weeks after death.

The animal in question was a full grown bull; the skull had a strong, bony, transverse ridge between the horns, a feature lacking in the cow.

The cow was nowhere as black as the bull except for a dorsal stripe starting about half way down the back and getting thinner posteriorly, not extending onto the tail. The general colour in the region of the withers and underparts (except the abdomen) was dull blackish, chocolate just above the white stockings as in the male; the posterior part lighter, distinctly brownish on the hind-quarters, part of the abdomen, the base and proximal third of the tail being yellowish brown or ochre only about the distal third of the tail black, the whole much more hairy than that of the bull; a white patch astern but not so dead white nor so sharply delineated. Head with short dull brown hairs longer and yellowish brown between the horns. The muzzle in this case dark greyish black, iris light sandy yellow with black flecks, the iris glazing and becoming indistinguishable within a minute or so of death.

The cow weighed 600 lbs. without entrails, the horns only 10 ins. long, circumference at base 6.5 ins., distance between tips 3.9 ins.

Unlike the Rhinoceros the "Temadai" has no particular value and its meat, at some seasons perhaps, has a most unpleasant taste (like a Rabbit that hasn't been drawn) very slightly evident at all other times, facts which combined with its ferocity when wounded and the light weapons of the natives make it anything but an object for pursuit, wherefore but little is known of its life history. It is mainly dependent on the aborigines, doing a good deal of damage to their "padi" and when that is cleared, feeding on the secondary

* Javan and possibly Malayan ones may lack this patch

growth that springs up, living mainly in the larger growth of some older clearing; unless molested it is therefore little of an old jungle animal and if the natives desert one part of their country it is fairly certain that the "Temadau" will move on in time, as has happened in the Ulu Mukah. This predilection for secondary growth, which the Dayaks call "Temuda," and the Malays "Jerami" or "Blucher," may perhaps account for its name in the former instance.

During the heat of the day they lie up either in thick secondary growth or beside a stream on a wooded hillside, descending about five o'clock in the evening to feed either on the "padi" or the first years "Temuda," of which they are particularly fond. Herds usually number 8 or 10, very occasionally as many as forty or fifty, sometimes only pairs or a solitary one. The bull described descended one evening into a clearing, announcing its coming by calling twice, a short and very nasal "moo" not so deep as a domestic cow; he passed by in the "Temuda" about 10 yards away, all one could see being an immense cloud of flies and occasionally the tip of his tail as he brushed them off. Eventually he put his head round a bush and a .44 Winchester bullet took him near the base of one horn, knocking him off his feet; a Skapan Penghulu, by name Tama Guru, rushed in with a large spear and stabbed the beast on the ground and again as it got up, when it made off tail in air without making a sound, T. G. following hot foot and supplying plenty of the latter commodity. I shot it again through the lungs as it went by and it carried on about 50 yards to a small rise, stopped to have a look round, did a few prances and vanished over the rise, from whence came confused "moosings" followed by a very definite yell from the Penghulu as he found the corpse: to his courage and whole hearted efforts was the securing of the beast due and his remarks on my failure to accompany him in pursuit of the wounded animal don't bear repetition.

I afterwards followed the tracks back up the hillside, up a small stream, past a much trodden resting place under some rocks to a place where he had frequently rubbed against the muddy banks of the stream, disturbing a full grown cow, no doubt his mate: Deer and Pigs abounded in the clearing and neighbouring jungle but there were no tracks in the immediate vicinity of the lair. "Temadau" are much troubled by flies, more obviously so than are Deer, and this may account in part for their bad temper at times; both the Bull and Cow shot had rubbed the underside of the neck against low branches, the skin being bare and corrugated but in no way resembling the bare and often sore patch found on the underside of the neck in Deer.

Shortly afterwards in another district a herd of 8 were found living in some secondary growth and a pack of dogs was used to bay them; beyond a preliminary "moo" the herd made no sound but three times the dogs held them, on each occasion the herd breaking away before we got to them through the thick growth. Even-

tually they divided up in ones and twos, a cow with a full size calf becoming so angered with the dogs that she attacked them, and followed them back to their owners who were standing in an awkward place, enclosed in small bushes and shrubs and tall "Lalang" grass, with narrow runaways between the thickets; the cow was so intent on the dogs that she never noticed the men until she went down under a shower of buckshot, some spears and even a blowpipe dart, all fired at a few yards range. The calf was allowed to escape; it had no horns but was bright reddish brown, brighter than a Barking Deer, the reddish markings of the cow being no doubt the remnants of such a pelage.

Even the Dayaks could not say when the young were born.

The Wild Ox does not occur South of the Balleh in Sarawak as far as is known though being a good swimmer, rivers are no obstacles to it. It is found in the headwaters of most rivers to the North of this and is at first neither wary nor fierce, when encountered undisturbed in sparsely inhabited country; it does not as a rule descend to the sea shore, always a more thickly populated region, but is said to do so in the Niah district where it has some reputation for ferocity and is said to have occasionally killed natives. Near Merapok in the Lawas district are included some of the "Lalang" covered plains more characteristic of N. Borneo, the hollows of which are filled with a secondary growth sometimes used by the "Temadau" to lie up in during the day and from whence it issues forth at dusk, to the dismay of anyone who happens to meet it.

They must move about a bit but are found in the Ulu Trusan, sometimes in the Limbang, at various places in the Baram, above Tubau in the Ulu Bintulu, at Belaga and down to the head of the Pelagus Rapids but not at present into the neighbouring Mukah and Oya Rivers.

Not very much has been written of *Bos sondaicus* but it is found in Borneo and Java; its occurrence in Sumatra was once suspected but is now definitely denied and it has recently been shown to inhabit the Northern end of the Malay Peninsula. In Siam, Burma and Assam it is well known as the "Tsaine" which is a bigger more variable animal than ours: the bulls are seldom black but may be Khaki coloured, blue grey, copper beech or even with white spots, forms not found here—the cows are more like ours, light chestnut. The horns sometimes have a wide spread (not found here) recalling those of the Buffalo (*Bos bubalus*) but all sorts are found. The "Tsaine" may go up mountains to 2000 ft. or more but is usually a lowland animal, mixing to a certain extent with Seladang (*Bos gaurus*), the herds separating on being alarmed; Seladang are of course not found in Borneo and are elsewhere distinguished by lacking the white rump patch. "Tsaine" occasionally attack unprovoked and often fight each other: solitary bulls move fast when feeding and may lie down in the middle of the morning to watch their back tracks, which causes them to be regarded by

some as the most dangerous of Asiatic game to hunt.* Solitary bulls are generally regarded as outcasts but it is more likely they rejoin the herd at intervals and go off with one cow. Calves, possibly twins occasionally, are said to take about 10 months gestation, pairing taking place about June or July and the Births about March or April.

The "Tsaine" stands just over 6 ft. at the shoulder and its record horns from Upper Burma measure $33\frac{1}{2}$ ins. along the outside curve; $21\frac{1}{2}$ ins. is the longest I know of from Borneo and the Gaur or Seladang is a much longer horned animal up, to 40 ins. or more.

On the islands of Bali and Madura this otherwise fierce animal is kept tame, looking something like the wild form and is imported into Singapore for beef; the Kalabits of Central Borneo and others obtain these cattle from Dutch Borneo and keep herds of them round their houses, often at an elevation of over 3000 ft. The cows very much resemble Guerneys, yellow ochre with a dark brown line starting about half way down the back and reaching to the tail; they are lighter than the wild Bornean cows, the rump patch is almost absent or very ill defined, as are the white stockings: the calves are just like the mother, yellow ochre with a dark brown line down the back and Bornean calves appear to be much the same from all accounts. Kalabit bulls are often almost black with a buff coloured face and no white rump patch but they frequently have a fair sized hump indicating a cross with Indian cattle at one time. The horns are short, straight and don't curl in the bull but are more slender, slightly curled at the tip and spread sideways in the cow which therefore differs markedly from the wild Bornean cow which has thick straight upstanding almost goatlike horns.

Bos bubalus Linn.

WATER BUFFALO: Malay: *Kerbau*.

The wild ones differ in no way from the tame ones, big, slate grey beasts with thickset, barrel-shaped bodies and ungainly legs; the ears and tip of the tail are well tufted and the general appearance indicates their origin at once.

The Buffalo is found wild in various places in Sarawak notably at Baram Point and at Tanjong Sirik, though it has occurred at other localities such as the Ulu Mukah; like the "Temadau" it prefers the secondary growth that springs up in abandoned clearings. Water Buffaloes are fairly tame in this country but whether the feral ones are domestic ones run wild or the latter originally tame editions of the former (many have since been

*In Sarawak the "Temadau" is not particularly dangerous and even a cow with its calf or a wounded bull will nearly always prefer to run so that in the ordinary way they are a distinctly peaceful animal; if wounded and further molested they do definitely become aggressive constituting a very real danger but unless one goes looking for trouble the Temadau is not in the least likely to molest one

imported) is not certain; from the restricted localities and the occasional domestic ones which take to the wild it is more likely that there were no indigenous buffaloes in Borneo. It is I believe uncertain if the Malayan ones are truly indigenous or just tame ones taken to the wild.

The horns are smaller in the female but I believe they are dimorphic elsewhere, some having the ordinary curved horns and some particularly wide spreading ones with a curl just at the tip.

A small and comparatively dark specimen from Baram Mouth is mounted in the British Museum as *B. b. hosei* but there seems to be no doubt that those at present to be found at Kuala Baram differ in no way from the tame ones from which they have descended. The Kalabits in the Ulu Baram keep large numbers of domesticated Water Buffaloes, some houses, such as Dalam Bah, must have nearly a hundred—which they obtain from Dutch Borneo and use for sacrificial purposes when someone dies; the Buffalo is essentially an animal of the secondary growth and it often happens that when the Kalabits move their house some distance to a patch of jungle, the Kerbau stay behind in the secondary growth of the old padi farms and eventually become quite wild. They differ in no way from the domestic ones but, as they are rather numerous, exert considerable influence on the country, keeping up open spaces and paths, cropping the grass and browsing on the leaves of the secondary growth which doesn't have so much chance to grow up and eventually develops into a park-like type of country not unlike the Buffalo "padangs" to be seen round many outstations. In some places they have produced a curious effect like a railway track with the sleepers taken up, for by walking along a path and each one putting his feet in the same place as his predecessor they have produced a most regular ridge and hollow arrangement across the paths they frequent.

ORDER V RODENTIA.

Gnawing Mammals.

Squirrels, Rats and Mice, Porcupines, Beavers, Rabbits and Hares.

The Rodents are distinguished at once by the two pairs of enormous front teeth, probably most developed in Beavers who are able to fell trees with them. Borneo is full of Squirrels, as may be seen in the accompanying table which however omits the Flying Squirrels since they may easily be recognized; Rats and Mice are also very numerous but so variable and uncertain that their identification is by no means easy: three Porcupines exist but of course no Beavers or Rabbits.

Some Squirrels run about in the branches, some on the ground, others glide from trunk to trunk, the size of the animal varying almost from as large as a Rabbit down to minute Mouse-like forms. Some Rats are also particularly large but the Spiny Rats are perhaps the most peculiar for many of the hairs have for some reason become

stiff and sharp-pointed very like the short flattened quills of one of the Porcupines (*Trichys lipura*), towards which they may represent a stage in development.

Actually Squirrels are the most interesting Rodents; the largest is a very bushy tailed animal with tufts of hair on its ears, a beast peculiar to Borneo, whilst the common Giant Squirrel (*Ratufa*) is nearly as large as a Rabbit. There are several medium size Squirrels, Prevost's Squirrel being the most notable, for it is divisible into half a dozen races and no two specimens are absolutely the same in colour; smaller Squirrels are numerous, the common little Coco-nut Squirrel together with a number of short tailed ground living forms. Finally one comes to the Pygmy Squirrels, amusing perky little animals no bigger than a Mouse but presenting all the Squirrel characteristics; somewhat different are the tiny Flying Squirrels also with medium and full size representatives.

Mr. Oldfield Thomas has made an interesting point in regard to the Pygmy Squirrels of the Sub-family Nannosciurinae; W. Africa and Malaysia present a few Mammalian resemblances and there occurs in the former a little Squirrel (*Myiosciurus*) apparently belonging to this Sub-family so characteristic of the latter region. America is full of Squirrels of the Sub-family Sciurinae, some of which such as *Microsciurus*, resemble the Pygmy Squirrels in appearance though belonging to the other Sub-family; in Guiana there appears to be a little Squirrel *Myiosciurus* actually belonging to the Sub-family Nannosciurinae rather than the prevalent Sciurinae, so that the true Pygmy Squirrels would appear to be found in Malaysia, W. Africa and Guiana.

This sub-family is unknown in the Malay Peninsula, but has representatives in Sumatra and the Philippines and in the Sulu Archipelago.

Hystrix mulleri Jentink.

PORCUPINE. Iban: *Landak dudul*; Kayan: *Kalong*; Tagal: *Kramok*; Murut: *Tautong*, *Lisis*; Dusun: *Garit*; Bajau: *Utun*; Selakau Dayak: *Penatam*; Sennah Dayak: *Bedah*.

The fore part of the animal is covered with stiff, slightly grooved, blackish bristles, the rear half with long thick quills white in the young and slightly yellower in the adults; in all cases with a black band about $\frac{1}{2}$ in. long on each quill, rather nearer the extremity than the base. The tail is very short and has a rattle consisting of a number of short quills each converted into a hollow cylinder on the end of a stalk, the noise made by rattling these together serving as a warning; some of these cylinders have the pointed tips broken off irrespective of the age of the animal. The nuchal crest is white tipped, short haired, not long as in the European species; here and there all over the body are long, thin, supple, hair-like bristles about twice as long as the quills. The whiskers are very long, black in the young, some of them white in the adult, reaching back a long way behind the ear.

The feet are very short, plantigrade, armed with short stout claws in the young, the toes very wide spread on the forefeet; they can of course dig well and, if it were not for the quills, the hump behind the shoulders would be quite conspicuous, as in the Anteater. They live under fallen trees and between rocks as a rule but no doubt help to excavate their own earths. The head is very blunt, the incisor teeth large and capable of giving a sharp nip or gnawing a way out of most places; they eat almost anything, even poisonous "tuba" roots, holding their food if small (such as monkey nuts) between the soles of their feet but if larger between their feet and the ground, food though often carried in the mouth being always held down to be eaten. They seem to be poor climbers, at least I have never seen them make any attempt to do so.

Loose quills are often found lying about in the jungle and one is often told Porcupines are capable of projecting their quills at will against an enemy, a physically impossible feat, whatever natives may say; as a rule "Porky" runs away at first in a swift jerky gait, suddenly stops and runs backwards or sideways into its pursuer, the sudden change of direction being most disconcerting. They can sometimes be hunted with dogs who soon learn to go for the unprotected head, for the Porcupine cannot roll itself into a ball like a Hedgehog and is soon killed; though they look so clumsy they have a most surprising turn of speed which would usually carry them safely to their burrows were it not that they very easily get confused when pursued. In other countries they are eaten by Tigers and Leopards but take little notice of each other's quills—there is also a story, for which there is some justification, that once the quills stick well into an enemy they go on working into the body and may some days after cause the recipients death. They are noisy animals particularly at night, the alarm being a series of chuckles with an occasional grunt and a couple of stamps of the hind feet on the ground; they also squeal when hurt. Water is often drunk and they swim well, rather low with just the head out of water. The rattle on the end of the tail is a great feature and is in constant use as a warning; the tail can be cocked up straight in the air at right angles to the body. Though sociable and gregarious, too many cannot live together, a pair that I had spending their time nibbling all the bristles off the front and hind legs of a third without breaking the pink skin: the skin is as thin and delicate as tissue paper, making them very hard to prepare and set up.

They live for a long time in captivity, get quite tame and knowing, "pedada" leaves and the bark of the branches being a great delicacy. Most of the day they lie up, only coming out about 5 o'clock in the evening; mine would also eat almost any refuse, but would not eat a dead "Flying Fox" though they consumed a Flying Lemur (*Galcopterus*).

A captive female had noticeably shorter and more stubby quills on its rump than its mate for I found he used to nibble off the

points of the quills, apparently to facilitate coition. The teats in the female are situated far forward on the chest, noticeably on the side of the body rather than underneath.

Trichys lipura. (Plate XII).

THE BRUSH-TAILED PORCUPINE. Iban: *Aukis*; Sennah Dayak: *Mingis*; Dusun: *Lisis*; Kayan: *Bula*.

This extraordinary animal looks like a large rat, for though it is really a porcupine the whole body is uniformly covered with small, stiff, brownish quills, resembling in shape, size and structure those found on the fore quarters of the other porcupine; the long tail is covered with scales except for a terminal tuft of bristles about 3 ins. long. Like its congeners, it is a subterranean animal and there are a number of long, fine, tactile bristles mixed up with the ordinary defensive ones on the body.

Many of the Spiny Rats recall this Porcupine for in the same way the hairs of their coat have stiffened into bristles resembling those of this Porcupine in particular.

I saw one running about in the jungle in daylight, rippling along with a peculiar snake-like effect owing to its scaliness and disappearing with great speed on being disturbed. It is a noisy animal in captivity, not so prone to stamp its feet as the ordinary Porcupine but letting off a series of louder, fiercer grunts, knashing its teeth and taking the offensive with a considerable bite. The tufted tail is a curious feature for it makes no noise though often shaken; tail-less specimens are sometimes found, even a tail-less mother with a normal young one, indicating that the tail is apt to get lost accidentally. The tail is massive and offers the most convenient hold to catch and pick up the animal, which is then quite unable to part with its tail like any House Lizard. Although the bristles on the tip have no apparent use the animal is most solicitous of them and proceeds with the tail slightly up—curved so that the extremity is well off the ground.

Hystrix crassipinnis Gunth.

PORCUPINE. Kadayan: *Lauden jirimban*; Iban: *L. Jurieng*; Land Dayak: *Beduk*; Dusun: *Garit*; Bajar: *Utun*; Selakau: *Pcnatam*.

Exactly resembles *muelleri* in size and shape, and as far as is known in habits and distribution, but instead of being black and white it is a greyish brown, dun colour all over, even the large quills are yellowish where they are white in the other species.

We have only three specimens, one of which is juvenile and resembles the adult; it seems on the whole to be rarer than the former kind and it is so far unknown what relation it bears to this though possibly belonging to a different genus. The Long and the Short tailed Porcupines may be found in the same burrows but the occurrence of the present species is so unusual that it is not so far known if it inhabits the same bury as its more common relative.

Family SCIURIDAE.

Squirrels.

- A Tail as long as body
 a Size medium, Total length $1\frac{1}{2}$ to 2 feet
 a¹ Underside white Sciurus hippurus pryeri
 a² Underside red
 b¹ No lateral or sub-lateral stripe Sciurus hippurus grayi and hippurellus
 b² White lateral stripe only
 c¹ Back black Sciurus prevostii borneoensis
 c² Back grey " " caroli
 b¹ White lateral & black sublateral stripe
 c³ Back fawn Sciurus notatus
 " prevostii baluensis
 " " atricapillus
 " " griseicauda
 c⁴ Back black " " pluto
- B Tail nearly as long as body
 a Size large, Total length over 2 feet
 a¹ Ears tufted, tail bushy Krampu Rhithrosciurus macrotis
 a² Ears and tail plain Engrabak Ratufa ehippium
 b Size medium, Total length about one foot
 a¹ General colour rufous Sciurus jentinki
 a² General colour speckled
 b¹ Underside yellowish Sciurus lowii
 b² Underside grey " tenuis and brookei
 c Size very small, Total length 6 inches
 a¹ No lateral or sublateral stripes
 b¹ Ears tufted Nannosciurus whiteheadi
 b² Ears not tufted
 c¹ Colour uniform Nannosciurus exilis
 c² Black and yellow patch behind ears " melanotis

a ² Lateral and sublateral stripes	Glyphotes simus
C Tail markedly shorter than body	
a Total length about one foot	
a ¹ Colour uniform	Funambulus laticaudatus & everetti
b ¹ Back reddish with 3 black stripes	„ insignis
b ² Back blackish with 4 yellowish stripes	„ hosei

Rhithrosciurus macrotis Gray.

THE TUFTED GROUND-SQUIRREL. Iban: *Krampu*; Land Dayak: *Pas (be) daum*; Tagal: *Tnaban*; Kadayan: *Basing baiong*; Kayan: *Penyamoh*.

There is no mistaking this large squirrel, the broad, bushy, almost fox like tail and the tufts of long black hairs on its ears at once distinguishing it. The general colour is dull brown with a grizzled back, the underparts white with a well marked black lateral line down the flanks. The hind quarters and root of the tail underneath are bright chestnut red; the bases of the hairs of the bushy tail are dull brown or black, the tips grey in the young and yellowish in adults giving a grizzled appearance. The thumb is very short and small, provided with a nail.

This graceful animal has often been taken in Upper Sarawak, rather less often elsewhere, for in the former locality it is not uncommon to see its tail used as an ornament of the sheath of a "parang." It is at times an aboreal animal but is often seen on the ground, as stated by Dr. Abbott. It runs very swiftly, a specimen I saw carrying its tail straight out behind it, the undulation of this organ obscuring the rest of it as it ran straight away. It is more usually recorded as holding its tail bent over its back. It is usually found in pairs and if one is shot the other is sure to be seen in that vicinity within a few days. A rather immature specimen had a strong, musky, Stoat-like smell absent in other specimens.

Another specimen was observed feeding on some fruits that had fallen to the ground; it made off through the jungle on being disturbed, its bushy tail carried straight out behind giving an impression of an animal at least the size of a large Lotong monkey (*Pygathrix cristatus*), the Squirrel eventually vanishing among the crevices of some rocks. In some parts they are said to damage gardens and to be not at all shy, adopting a threatening attitude by sitting upright, so to speak enveloped in their bushy tail, the long black-tufted ears sticking out on each side.

Only a few mammals are peculiar to Borneo and this is one of them, being absolutely without any relations elsewhere.

Ratufa ehippium Muller.

THE GIANT SQUIRREL. Iban: *Engkrabak*; Tagal: *Tanta*; Kayan: *Begah*; Kenyah: *Mangka*; Kalabit: *Sagi*.

1931] *Royal Asiatic Society*.

A very large and conspicuous squirrel, nearly three feet long with a long, dark, bushy tail; no two specimens are quite alike and it is not a simple matter to give descriptions that will fit the various forms.

In Western Sarawak is a form with a pale yellowish snout, black head and broad but indistinct black dorsal stripe, thighs and feet white or slightly buffish and a long, dark brown, hairy tail, flattened, compressed and sometimes ticked to form annulations; the fore parts of the flanks are much lighter when compared with the back. Frequently specimens are very light and whitish, others more rufous with a reduction of the black on the back approaching the next two forms to be described, whilst rarely typical forms may be recorded from outside localities.

The next form (*colurnata*) is from the Saribas District and is much browner and more rufous, particularly on the fore parts of the flank, the black dorsal area being reduced in extent and intensity; this form again overlaps with the next and is not too well marked by the characters suggested. In the Baram area is a more or less uniformly coloured form rufous or ticked on the back with no dark area differentiated on the back; certain rather more ticked and rufous specimens from Mt. Dulit were thought to be peculiar but there is no reason for separating them as distinct. From Kinabalu and N. Borneo is a form (*sandakanensis*) in which the rufous markings have almost disappeared except just on the tip of the snout for the back is broadly black, thighs, forefeet and flanks grizzled dark grey and the very feathery tail is black with a number of buffish annulations; in the Merapok Mts. of Lawas this form occurs with a certain amount of buff on thighs and flanks indicating a leaning towards *baramensis*.

This is a common squirrel and being about as large as a Rabbit its passage through the tree tops is liable to attract the attention of the least observant, the obliging animal as a rule showing no particular fear of its pursuers: in fact in captivity it appears as a quiet, indolent and altogether amiable animal, mixing peacefully with the quarrelsome "prevostii" squirrels and sleeping in a heap together with three "Oucangs:" as a matter of fact this was deceptive for it resented handling, became most aggressive, attacked before ever it was touched, inflicted a severe bite and after a lot of chuckling gave vent to a clear string of loud rather bird like whistles either in fear or defiance; a wounded one attacked the man who tried to pick it up and inflicted a deep wound in his skin, particularly with its lower incisor. I have seen it climbing up the bare, branchless, trunk of a tree but it is most often found among the smaller leafy branches, on which it often but by no means always sits crosswise, the long tail hanging down as a balancing organ. In captivity it will often come on to the ground and even burrow under a pile of leaves and grasses but it hardly ever descends in a wild state; the usual things are eaten, pisangs, various shoots and leaves.

The nest is a huge affair high up and far out along a branch, recalling that of a Magpie at home; a number of large sticks are very loosely set in the fork of a tree and the inside lined with some fine brownish fibres, the entrance opening downward. The whole is so loosely made that it falls to pieces when brought home and the same applies to the nest of *Sciurus prevostii*, which moreover does not differ in appearance, construction or locality.

It is a lowland animal, seldom going above 3000 ft. and is absent from the Kalabit country, Ulu Baram, being apparently shut off by the Pamambo Range some 5000 ft. high.

Abbott records a hawk (*Spilornis cheela bacha*) stooping at one in a tree and I imagine these squirrels and their companions must figure as one of the main items in the fare of *Felis nebulosa*, the Clouded Leopard, and the several other Felines which are mainly arboreal in these parts.

Sciurus prevostii Desm. (Plate XII).

PREVOST'S SQUIRREL. This is rather a common squirrel in the jungle, very active and very noisy but keeping mostly to the trees though I have seen them on the ground; captivity seems to upset their normal habits and they readily take to the ground, even sleeping there. They soon get fairly tame but are intolerant to anything else resembling a squirrel, even of their own species, and they get up many bite and run fights among themselves without doing much damage in spite of the distinctly sharp bite they can give; opposite sexes are for some reason particularly quarrelsome at times. They tolerate Oucangs, tortoises and even the larger Ratufa Squirrel and the Mouse Deer but are even more antagonistic to a Tree Shrew than to each other, the most down trodden of them always helping to chivvy the Tupaia, who made no sort of a fight against them. They never curl the tail over the back like the English Squirrel but hold it out unbent behind and somewhat inclined upwards; the tail is very much of the flue-brush variety, hairs sticking out at right angles from the long axis of the tail and not feathery and flattened as in the large *Ratufa*.

Food is usually eaten sitting along and not across a branch and whether ascending or descending or even on the ground the fore feet are much splayed, so that the digits are at an angle to the direction it is proceeding and obtain a widespread grip on each side; the "thumb" has a nail instead of a claw which is prominent both in climbing and holding its food when eating. It progresses on the ground by a series of hops but runs easily on branches and it is much more usual for its forefeet to be splayed out sideways, sometimes quite at right angles to the body, rather recalling the position assumed in the flying relatives; ascending or descending a tree the forefeet are extended horizontally, the hind feet are vertical and the whole is cross shaped, the motive power supplied by doubling up the hind legs and position maintained by pressing the widespread forelegs and the body against the trunk.

When eating, the food is held between the palms of the two "hands" and pieces chipped off by the lower pair of incisor teeth working against the upper pair, much of the food being wasted by dropping; when "squatting" during feeding it is of interest to note that their "sit upons" do not rest on the surface of the branch but touch the back of the leg whilst the Tree Shrews actually sit with the ischial region definitely touching the branch or the ground on which they happen to be.*

This squirrel makes a huge Magpie-like nest usually high up in a tree, a nest as large and quite indistinguishable from the bigger *Ratufa* squirrel; the nest consists of a thick outer layer of fairly big sticks gnawed off by themselves and the inside is lined with much shredded bark and a few grass-like bents, the entrance being usually low down on one side of the bundle. Females are usually in milk during the first three months of the year but I do not know how many young they have; the young are recorded by my collector as being carried in the mouth by the scruff of the neck like a cat with a kitten. Pairs in captivity often assumed what appeared to be a copulatory attitude but the hinder one merely combed the hairs of the other with his long lower incisor teeth.

I have not described at length the many races of this squirrel but their distinguishing features may be seen in the "Key" to the various species of *Sciuridae*.

***Sciurus tenuis parvus* Miller.**

THE SLENDER SQUIRREL. Another medium size Squirrel more truly arboreal than many. In colour ticked fawn, some light and some dark with a light grey, almost white, underside, the tail with many buff or greyish hairs; there are no lateral stripes and the bright colour on the forelimbs and thighs distinguish it from *brookei*.

This appears to be a common lowland Squirrel though little is known of its habits except that it ascends the lower slopes of mountains to some extent.

***Sciurus jentinki* Thos.**

JENTINK'S SQUIRREL. Judging by the Sarawak Museum specimens of this Squirrel (7 from Kinabalu and 1 from Murud) it has not a good claim to rank as the high altitude race of *Sc. tenuis*: *jentinki* is perhaps smaller, there is a rufous or orange-washed area on the back, the underside varies from greyish to ochraceous and the forelimbs and thighs are not markedly brighter than the rest of the body. The most distinctive feature is a light cream coloured ring round the eye and edge of the ear; in fresh skins these rings are pure white and the underside is whitish tinged with an almost salmon pink.

Undoubtedly this is a high altitude Squirrel and is stated to have been taken on Mt. Dulit and Mt. Murud; two from Mt.

* This is usual but not invariable.



The Brush-tailed Porcupine (*Trichys lipura*).



Prevost's Squirrel (*Sciurus prevosti caroli*).

Murud Kechil, Ulu Akah, I am inclined to think are only *Sc. tenuis parvus*; True *jentinki* does not look to me anything like *tenuis* and the eye and ear markings are distinctive.

Sciurus lowii lowii Thos.

LOW'S SQUIRREL. This Squirrel, like *Funambulus laticaudatus*, appears to have been very common even round Kuching forty years ago but the fact remains that five years recent collecting has not produced a specimen and I cannot say much regarding its appearance or habits. Nearly all our specimens have shortened or broken tails, a natural feature unless obviously damaged but giving the whole animal a suggestion of the shape of the Ground Squirrel's of the genus *Funambulus*.

The general colour is a very dark brown, heavily ticked, lighter on the flanks, the tail barred; the underside is usually light cream coloured, almost whitish. To look at it is very like *F. laticaudatus* but the underside and flanks particularly lack the yellowish buff suffusion of this ground Squirrel.

Mr. F. N. Chasen writes that this is extremely common in most parts of N. Borneo where *tenuis* could nowhere be obtained.

Sciurus brookei Thos.

BROOKE'S SQUIRREL. A medium size, fawn coloured Squirrel with a clear French grey underside and no lateral stripes; as it is not a common Squirrel its altitudinal distribution is uncertain but as more specimens are obtained this may prove to be a mountain form of *Sc. tenuis*,* even though the two probably overlap in the transitional area.

It is found among the trees usually above 3000 ft. and has been most frequently taken on Mt. Dulit but also on the Baram River and in East Borneo. My collectors staying at Long Akah in the Baram, only some 350 ft. high, procured a specimen which was quite likely obtained by a native on the adjoining mountains but gave a false impression of the lowland status of this Squirrel.

Sciurus adamsi Kloss.

ADAM'S SQUIRREL. This is a medium size squirrel very like *S. vittatus dulitensis* but smaller and distinguished by the white patches behind the ears.

Two were originally taken by Dr. J. C. Moulton in the Baram River and subsequently named after Mr. C. D. Adams, District Officer in Baram at the time; it has since been taken at low altitudes on Kinabalu and elsewhere in N. Borneo.

[Sciurus beebei Allen.

This squirrel appears to have been an ordinary *notatus* from the 10th mile, Kuching, but distinguished by having a median ventral black stripe; it has I am told been withdrawn by its creator as a foreign Squirrel with the wrong locality.]

* Mr Chasen has since written that *brookei* is possibly not a Malaysian beast but an outlying member of a species with forms in Celebes; *adamsi* by a long stretch may be another outlying Celebean form.

Sciurus notatus dilutus Miller.

THE PLANTAIN SQUIRREL. Though this and the next squirrel vary a good deal they are both medium sized, usually a light Rabbit colour, the back ticked and the tail ringed; there is a rather broad, black sublateral and a pale buffish lateral stripe, neither of them sharply defined at their edges; the colour of the underparts distinguishes the two forms, those of *dulitensis* from the Baram and Mt. Dulit being bright chestnut red and those of *dilutus* sort of dirty greyish-red. *Dilutus* is said to be more characteristic of E. Borneo but both there and in Sarawak (Kuching, Saribas) there exist a number of specimens with ochraceous tawny underparts which should perhaps be referred to *dulitensis*.

We have one cream coloured specimen from Balingian, slightly red below and with but a faint lateral stripe and an even fainter sublateral. The young are very bright, the phalanges black, lateral and sublateral stripes well marked and the underside a clear chestnut. In a collection of 28 specimens in the British Museum, all from the Saribas, 3 have the underparts almost grey, 15 deep reddish and 10 are intermediate.

The "Tupai pinang" or "Tupai kelapa" does an enormous amount of harm to rubber trees and coco-nut palms, nibbling the young shoots of the former and attacking the "umbut" or growing point of the latter as well as boring holes in young nuts; they are most prolific breeders and have 3 or 4 young at a time in some hole in a hollow tree. In captivity they fought among themselves but didn't molest the Tree Shrews or larger Squirrels; the tail is peculiar in this species, rather sparsely covered with hairs sticking out in all planes at right angles to the long axis of this member and giving a sort of flue-brush appearance.

Sciurus notatus dulitensis Bonhote.

THE PLANTAIN SQUIRREL. As I have remarked above this squirrel resembles *dilutus* except for its bright red underside. It is found chiefly in the Baram district and on Mt. Dulit and even on Kinabalu. Except in the smaller size it much resembles one form of *Sciurus prevostii* (*baluensis*).

Sciurus nigrovittatus orestes Thos.

THE GREY-BELLIED SQUIRREL. This is the Bornean representative (never found in the lowlands) of a species found in Java, Sumatra and the Malay Peninsula. The back is a uniform, rather warm, rabbit colour, the tail darker, the lateral and broad sublateral shading indistinctly off into a dark grey underside. There is a white patch behind the ears.

Mountains such as Kinabalu and Dulit from 3—5000 ft. are its home.

Elsewhere *nigrovittatus* and *notatus* (*vittatus*) forms occur side by side and the former cannot be considered the mountain form of the latter.

Sciurus (Tomeutes) hippurus hippurellus Lyon.

THE HORSE-TAILED SQUIRREL. This is a medium size Squirrel prettily marked in a delicate way; the back, flanks, fore and hind legs and even the base of the tail ticked much the same colour as a Rabbit, the crown, nose and sides of the neck grey, the tail black, some of the hairs at the tip being rather rufous. There are no lateral or sublateral stripes and the underside is red or chestnut.

It is a common lowland species but not found at any height on mountains in Sarawak proper: the Kapuas and Pontianak area are about its limits as it does not cross the Rejang River and is replaced in N. Sarawak by another race.

It is usually seen in pairs and is quiet and inoffensive as a rule, not making the usual chattering noise of most Squirrels; in captivity it was the easiest of all to tame and lived a most peaceful life, being far less aggressive than its relatives.

Sciurus (Tomeutes) hippurus grayi Bonh.

THE HORSE-TAILED SQUIRREL. Kayan: *Petitti*; Kenyah: *Pelabun*.

This pretty Squirrel has the crown, nose, sides of the neck, fore and hind legs a dark grey but the back ticked a bright rufous, much darker and redder than in the S. Sarawak race; the underside is of course red and there are no lateral stripes.

Though common in the Baram area its range is rather restricted elsewhere for it is unable to cross the high mountains of the interior; the district between the true right bank of the Rejang and the Sea is however occupied by it as far South as Mukah and the two races intermingle somewhere on the left bank of the Rejang River in the neighbourhood of Kapit and the head-waters of the Batang Lupar.

Sciurus (Tomeutes) hippurus pryeri Thos.

THE HORSE-TAILED SQUIRREL. This race has the grey head and cheeks of the other races but the back, fore and hind feet are more or less clear rufous without the tickings and the tail is well grizzled with grey; the underside is pure white instead of chestnut.

It inhabits the Northern part of N. Borneo and does not appear to occur in or near Sarawak.

Glyphotes simus Thos.

THOMAS' PYGMY SQUIRREL. In appearance this squirrel is very like a small *Sc. notatus* for which one of our specimens was mistaken; the very large incisor teeth above and below in so small an animal is distinctive, otherwise it is just a small drab coloured squirrel with drab ventral surface, dull white lateral and irregular black sublateral stripes.

We have one from the Merapok Mts. and another from Kina-balau, from whence the Raffles Museum has lately obtained another.

The skull of this animal is remarkable when compared with that of *Nannosciurus spp.* which is roughly the same size, for the former has comparatively much longer and thicker incisor teeth above and below than the latter.

Nannosciurus whiteheadi Thos.

WHITEHEAD'S PYGMY SQUIRREL. Dusun: *Pantin*.

This most peculiar little Squirrel is confined to Borneo and presents an extraordinary appearance: though only about six inches long it is the complete Squirrel with a bushy tail, generally grizzled dark brownish in colour with dark grey underparts but the tips of the actual ears are black and there is a tuft of greyish white hairs an inch long on the extremity of each ear.

This species is only found on mountain tops above 3000 ft. and would appear to be commonest on Kinabalu though found also on the Merapok Mts., Murud, Dulit and even Mt. Penrissen.

As far as I know there is nothing peculiar about its habits though from accounts it appears to be more arboreal than some of the other species.

Nannosciurus exilis exilis Muller.

PYGMY SQUIRREL. Iban: *Pukang*; Kayan: *Oho*.

This little Squirrel is uniformly coloured rufous on the head and back, lighter on the flanks, the underparts pale but suffused with rufous.

Everywhere on the lowlands one meets with this little Squirrel, a most cheery and inquisitive little animal, now and then letting out a long drawn squeak, one of the commonest jungle noises in the morning and evening. It is largely terrestrial, running about on fallen tree trunks, occasionally climbing trees, stopping every now and then to look around and flirt its tail. It is not at all shy and comes up to inspect ones feet if one sits quiet enough but for some reason it never goes into the traps set for it and seems to enjoy perversely playing about the wire cages without thinking of entering therein.

Some Dayaks set a certain amount of value on this Squirrel alleging it to bore with its male organ minute holes in bamboo, such a bamboo being highly prized by the funder, particularly if as they sometimes assert the male organ remains fast in the hole. The holes so exhibited are I believe actually made by a boring Beetle in an old bamboo.

The Kayans will not kill this little animal—small reason why anyone should—and have woven a marvellous story about it. Apparently the Gods were once very angry at the waste of fruit by the various animals and had them "on the mat" in turn, proving to the Brok, the Deer, the Pig and a host of animals that they actually wasted much more fruit than they ate or even required. Each denied the accusation but with the exception of the Mouse Deer was ingeniously shown to be in the wrong, whereupon the various Mammals concerned decided (as perhaps humans would have also) to be revenged on the "Pelandok," who thought himself so fine; but the Pelandok promised to fight all and sundry at one o'clock next day on the edge of a certain clearing and caused the men living in this clearing to dream of a most wonderful burn if they lighted

their clearing at mid-day on the morrow. The hosts of P'ig, Deer, Brok and other animals issued forth to give battle at the appointed time but were consumed by the fire then at its height, only the "Oho" having had the sense to side with the Mouse Deer in this seemingly unequal contest.

Nannosciurus exilis sordidus Chasen and Kloss.

PYGMY SQUIRREL. This race was described from middle East Borneo. It is much duller on the whole than Sarawak and W. Borneo specimens.

Nannosciurus melanotis borneanus Lyon.

PYGMY SQUIRREL. This pretty Squirrel is grayish buff in general colour, quite buff below and on the head; two narrow buff stripes start on the nose and broaden out into creamy white beneath the eyes, becoming more buff again as they pass under and reach behind the ears. There is a deep black patch behind the ears and a greyish pointed dorsal marking between them and on the nape.

Though this Squirrel is so common in collections I have for some reason never seen a live one and cannot speak of its habits for certain, though they are doubtless much the same as those of *N. exilis* which is easier to observe.

Nannosciurus melanotis pallidus Chasen and Kloss.

THE BLACK-EARED PYGMY SQUIRREL. This race is recorded from middle East Borneo and is pale when compared with Sarawak specimens, particularly as regards the head and buffy ear stripe.

Funambulus (Lariscus) insignis diversus Thos.

Land Dayak: *Pass gegin*.

A medium sized but very distinct squirrel, for the flanks and thighs are bright chestnut and the back grizzled greyish with a median and two lateral black longitudinal markings; the belly and chest are creamy white. The tail is short, the same thickness all along, more or less grey above and quite rufous below.

A not uncommon lowland squirrel, found usually singly as far as I know, all over Sarawak, almost entirely terrestrial or seen running about on fallen tree trunks.

Funambulus hosei Thos.

GROUND SQUIRREL. This peculiar squirrel resembles *insignis* in size but in little else; in colour it is very dark, a dull rabbit colour, darker than the two light dorsal stripes of *insignis* but with no rufous at all, the underside washed with pale yellowish. There is a peculiar, median, dorsal, narrow, reddish-buff line with a fairly wide black area on each side; then outside that on each side a light almost dirty white longitudinal stripe from shoulder to tail and outside these another black one, the whole suggestive of lateral and sublateral stripes not yet shifted down onto the flanks.

The tail is not fluffy, and the snout is short, not elongated as in an allied Malayan form, of which it is probably not the Bornean representative.

It has been taken on Kinabalu at 5000 ft. and at a similar altitude on Dulit and Batu Song but is not represented in our collections and seldom elsewhere.

***Drenomys everetti* Thos.**

GROUND SQUIRREL. Dusun: *Mengaluton*.

The back is uniformly grizzled dark all over, the underside grey, the tail short and thick.

This is I believe an entirely terrestrial squirrel found apparently on all mountain tops above 3000 ft., Kinabalu, Pamambo Range, Dulit, Penrissen and Poi. It looks like a large rat running in and out of the fallen tree trunks and is I suppose one of the commonest high altitude animals.

***Rhinosciurus laticaudatus* Mull. and Schleg.**

GROUND SQUIRREL. The back is very dark, slightly ticked and with long black bristles; the vent is cream coloured, a little fulvous on the flanks, the tail as usual short and thick. The snout is long.

This species in old days was very common round Kuching but, in keeping with many other animals, felling the jungle has driven it away and in five years including much collecting near Kuching only one specimen has been taken; it occurs apparently in other parts of Sarawak but I have never seen one and cannot say anything about its appearance or habits.

***Petaurista nitida rajah* Thomas.**

FLYING SQUIRREL. Malay: *Kubong merah*; Dusun: *Tagaut*.

This large flying squirrel is a bright chestnut red all over, but the nose, a ring round the eyes, the ears, forefeet and hind feet are all tipped with black, and there are here and there a certain number of black hairs on the back; immature specimens are darker, more blackish whilst very young ones have the head and back black. The underside is paler as is also the tail which is much like it in colour. This species is of course famous for the cartilaginous support running back from the wrist supporting and extending the patagium during flight.

Though a common animal I have never seen it wild, but one in captivity proved a most surprising animal; it was remarkably fierce, growled and advanced threateningly when annoyed, curiously enough striking out suddenly with one or both of its sharp clawed forefeet; the blunt face, big black beady eyes and black upstanding ears gave it a most aggressive appearance. It of course climbed well, the patagium folded up so that it was neither obstructive or noticeable and the long tail mostly used as a balancing organ; when at rest on a branch or on the ground the tail was bent round over the back and the black tip recurled over the extremity of the tail: when asleep the tail was curled round the body and face. During the day it was not a very wakeful animal but in the evening used to come out and feed on bananas; I never saw it gliding but it used to make

prodigious leaps and progress on the ground in a series of rather awkward hops suggesting that it was not very used to the lower regions.

The habits of an allied species *P. philippensis* have been described in India; apparently it is nocturnal, lives in the hollows of trees or the dried fronds of tree ferns, often goes in pairs and returns to the same place night after night: it is sluggish and reluctant to leave its hole by day, can glide nearly 100 yards and alights with a slight "phut," as I have also noted in some of the smaller Flying Squirrels. It appears to breed all the year round, to have one young which remains with its parent until nearly full grown; the nest is said to be lined with leaves and a mixture of the animals own fur.

***Petaurista nitida thomasi* Hose.**

FLYING SQUIRREL. Dr. Charles Hose described this species from the Silat, a tributary of the Baram River; it is apparently just like the big red Flying Squirrel but lacks the black tip to the snout, ears and tail, being therefore rufous all over.

***Petaurista nitida lumholzi* Gylde.**

FLYING SQUIRREL. Another race has been described from Central Borneo remarkable in the main for having very poor black tufts to its ears. The validity of these races rests on single specimens and awaits further examples, for Flying Squirrels are no less subject to variation than other Squirrels.

***Petaurista (Aeromys) phaeomelas*.**

FLYING SQUIRREL. This is a large Flying Squirrel only slightly smaller than *nitida* but as a rule dark chocolate brown in colour, with a varying amount of grey grizzling on back, hindlegs and tail.

It is not a common Squirrel but has been taken at various places in the lowlands of Sarawak. It has been put in a separate genus with a race (*tephromelas*) from the Malay Peninsula.

***Hylopetes everetti* Thos.**

FLYING SQUIRREL. I think this medium size Flying Squirrel is the commonest in Sarawak; in colour a varying shade of yellowish brown to buffish on the back and head which may be grey, the feet and patagia black, or at any rate a very dark brown, as is the underfur. The underside is grey, the flattened tail varying from dark brown to umber, constricted at the root where it is either a pale clear grey or buff.

I have at times seen this Squirrel, running up a tree trunk and along a branch in the ordinary way but sometimes ones attention may be attracted by a falling leaf acting queerly, descending on a long slant, sometimes tilting in front and sometimes behind; the supposed leaf may land on a tree trunk with a quite audible "phut" and the Squirrel scuttles upwards to be soon lost to sight until another flight is made.

Hylopetes (harrisoni) caroli Gylf.

FLYING SQUIRREL. A single specimen was described from E. Borneo notable for having the white area of the throat continued in a narrow line down the underparts: it is not much to found a race upon but we have a single specimen from near Kuching which would raise it to specific rank (*everetti* being there found also) if one believes in its distinctness, a course I do not follow.

Iomys lepidus Lyon.

FLYING SQUIRREL. Another race has been described from S. W. Borneo, differing mainly in being smaller than *thomsoni*; the name *lepidus* has also been used for the Javan form of *Hylopetes everetti* and I consider that this race is of doubtful value.

Iomys thomsoni Thos.

FLYING SQUIRREL. Next to *Hylopetes everetti* this is the common small Flying Squirrel; it is slightly bigger, a more uniform dark brown and the tail though constricted at the base lacks the pale clear buff characteristic of that region in *H. everetti*.

On the ground, which is not of course its natural habitat, it proceeds in a series of hops, the tail stretched out behind and sharply arched proximally. It of course climbs readily and takes prodigious leaps but when feeding the tail is curled over the back and the tip recurled just behind the head in a position exactly similar to that adopted in *Pteromys nitidus*.

Pteromyscus pulverulentus borneanus Gunth.

FLYING SQUIRREL. A medium size Flying Squirrel about 18 inches long, the general colour of the underfur dark brown but obscured by masses of grey hairs which constitute the prevailing colour, except for the tail which is dark brown and very fluffy.

Malayan specimens are I believe more brown and not so grey, but so few specimens are known that I cannot say if the Bornean race is separable.

Petinomys genibarb is borneoensis Thos.

FLYING SQUIRREL. This is the first of the Pygmy Flying Squirrels, tiny little animals little more than six inches long. *Genibarb is* is a uniform reddish brown with many light hairs on the head and a pure white underside.

Petaurillus setosus Temm.

FLYING SQUIRREL. There are a number of these Pygmy Flying Squirrels of which this is the one most often taken, though it is comparatively rare. It is a very dark brown with an irregular mass of greyish hairs on the back, the head quite grey, the tail quite brown, constricted at the base, where it is white on the underside like the rest of the body.

Petaurillus hosei Thos.

FLYING SQUIRREL. All the Pygmy Squirrels have long and pointed ears but those of *hosei* are twice as long as in *setosus*; the white tipped tail is also peculiar to this and the next species.

Petaurillus emiliae Thos.

FLYING SQUIRREL. This is described as being exactly like *hosei* but smaller, a not very distinctive character when dealing with two "species" which both come from the same district, namely the Baram.

Family MURIDAE.

Rats and Mice.

Bornean Rats, all Oriental Rats, have long been the bane of systematists; colour, spines, skulls and length of tail all vary so much that there are a host of species most difficult to identify and it is not easy to name and describe the common Rats one may meet.

Non-Spiny Rats.

Rattus sabanus sabanus Thos.

JUNGLE RAT. A large and yellowish, buff coloured jungle rat with a sharply defined, creamy white underside, the hairs everywhere soft and not spiny. The clear bright colouring, large size and very long tail distinguish this species.

It has been taken all over Sarawak sometimes on mountains such as Kinabalu, Dulit and Poi, and sometimes on lowlands at Baram, Niah and near Kuching; there are races in Java, Sumatra and the Malay Peninsula.

Rattus muelleri borneanus Miller.

JUNGLE RAT. This is another large Rat whose colour I can only describe as "ratty" and whose underside as a pale creamy white: like *R. sabanus* it has a long tail, noticeably very large hind feet and soft non-spiny hair.

It occurs all over lowland Sarawak and Borneo but has also been taken quite high up on Kinabalu: houses and clearings are not frequented and this Rat is to be found mainly in old jungle.

Rattus infraluteus Thos.

JUNGLE RAT. This curious Rat is probably peculiar to Kinabalu: it is quite a large animal, very furry and spineless, dark brown above and below.

The "*rattus*" Rats come next and it must be confessed it is difficult to convey a clear account of the species as they occur.

Rattus rattus neglectus Jent.

THE MALAYAN FIELD RAT.

Definitely a field Rat, not found in towns though it may occur on the outskirts or be found round native houses, for example in rice fields, where it does a good deal of harm. Beyond being "ratty" in colour it is notable for a whitish or light grey underside, very distinct from the flanks and back. The small hind feet clearly distinguish it from *R. muelleri*.

Rattus rattus diardi Jent.

THE MALAYAN HOUSE RAT.

Very similar to the last but the underside a dark grey almost ochraceous, not so distinct from the colour of the upperside. Strictly

speaking it is often difficult to determine specimens as one or the other species and it is quite possible interbreeding goes on, particularly on the outskirts of towns where the two overlap.

Rattus norvegicus Erxl.

THE SHIP RAT.

Occurs in the ports of Sarawak and is noticeable for its short tail, shorter in fact than its head and body, whereas that organ is the longer (or as long) in the Malayan House Rat.

Rattus concolor ehippium Jent.

Though distinctly "mousey" in colour this animal is actually a small Rat, larger than the European or Asiatic House mouse (*Mus musculus* or *humourous**) whose appearance in Sarawak is uncertain; this small Rat is very common in houses.

Spiny Rats.

Rattus surifer bandahara Robinson.

JUNGLE RAT. This was formerly confused with the next longer established species. Both are medium sized, long tailed spiny rats, a rather clear buff above and white below. The species in question was separated on account of a varying almost pinkish collar showing on the underside of the neck, the white of the underside further not reaching to the sole of the hind foot.

It is found with the next species on Kinabalu and certainly on the lowlands of Sarawak.

Rattus rajah rajah Thos.

JUNGLE RAT. As I have mentioned, this species is very like the above, with which it occurs, the characters separating them being very technical points.

Rattus whiteheadi Thos.

JUNGLE RAT. A very variable medium sized Rat—about the size of *R. concolor*. Some specimens are a pretty fawn colour, with a pinkish bloom on the ventral surface in life though this fades somewhat after death. Other specimens are more "ratty" in colour and greyer below, so much so that Thomas tried to separate those of Kinabalu from other parts of Borneo but the variations are found throughout the country and are not peculiar to any one locality.

Like *R. muelleri* it is found only in old jungle and never in houses or clearings.

There now follows a host of Rats, many peculiar to Kinabalu.

Rattus alticola alticola Thos.

Only known from the higher parts of Kinabalu, up to about 8—9000 ft.

Rattus alticola ochraceiventer Thos.

JUNGLE RAT. From Kinabalu below 3000 ft.

* Recorded from Sandakan.

Rattus rattus baluensis Thos.

JUNGLE RAT. Found on Kinabalu only from 8—10,000 ft. and possibly a high altitude representative of *neglectus* which occurs up to 3000 ft.

Rattus baeodon Thos.

JUNGLE RAT. Kinabalu only.

Rattus cremoriventer kina Thos.

JUNGLE RAT. Described from a low elevation on Kinabalu but also found elsewhere in the lowlands.

Rattus rapit (jerdoni) Thos.

JUNGLE RAT. Kinabalu, Dulit and Penrissen as well as lowlands such as Lawas and Niah.

Species of the genus *Ciropodomys* are all small and mostly so hard to identify that it is very uncertain how many species occur in Borneo; specimens are few, species being sometimes founded on single ones and the genus as a whole is distinctly rare.

Though small and mouse-like in size and in appearance they are remarkable mainly for the large ears and long whiskers and particularly for the presence of a nail instead of a claw on the "thumb" and "big toe," some species being undoubtedly arboreal: As in the Pen Tailed Tree Shrew (*Ptilocercus*) the tail is rather sparsely covered with hairs except for a vane at the end.

Chiropodomys major Thos.

PENCIL-TAILED MOUSE. Several taken at Sadong and one from Kuching, notable for the comparatively long tail. A specimen was taken alive in a trap set in the top of a tall tree and was kept for a long time, feeding on fruit and bananas. Normally it was not active until evening but on being disturbed during the day became very agile and quite savage for so small an animal, making determined efforts to bite its aggressor; ordinarily it was a scrupulously clean and rather dainty little beast.

Chiropodomys legatus Thos.

PENCIL-TAILED MOUSE. Found only on Kinabalu and apparently the largest species of the genus.

Chiropodomys pictor Thos.

PENCIL-TAILED MOUSE. So far found on Kinabalu and also at Balingian on the coast near Mukah. The tail is relatively very short, much shorter than the body.

Chiropodomys gliroides Thos.

PENCIL-TAILED MOUSE. One taken on Kinabalu at 1000 ft. agrees with some from Burma and Tennaserim.

Chiropodomys pusillus Thos.

PENCIL-TAILED MOUSE. From Kinabalu 1000 ft.

Haeromys margarettae pusillus Thos.

JUNGLE MOUSE. Found on Kinabalu and smaller than *m. margarettae*.

Haeromys m. margarettae Thos.

JUNGLE MOUSE. So far only known from Mt. Penrissen.

ORDER IV CARNIVORA.

(Cats, Dogs, Stoats, Badgers, Otters etc.).

This Order is made up of Flesh-eating Mammals, reaching their highest specialization in Cats, provided with long, sharp, canine teeth for stabbing and holding their prey together with knife edged molar teeth working against each other like the blades of a pair of scissors in cutting up their meat. All Carnivores exhibit these characteristics to some extent, in accordance with flesh-eating requirements.

The Order includes of course the Seals, Walruses and Sea Lions, Mammals entirely absent from Borneo and requiring no consideration here; Dogs, Jackals and Foxes are also unknown and call for no special mention. Cats however abound and, in the absence of Tigers and true Leopards, the largest is the Clouded Leopard, a beast some 6 feet long and probably a lowland representative of the Central Asian Ounce or Snow Leopard. Civet Cats are most numerous but differ from Cats in many ways: the latter have their claws retractile within a sheath usually absent in Civets whose claws are as a rule only partially if at all retractile. Cats further have a very short blunt muzzle, a few molar cutting teeth specialized in accordance with their flesh eating requirements whilst Civets have a rather long sharp-pointed muzzle and many not so particularly specialized teeth in accordance with their more omnivorous habits. Allied to the Civets is the Mongoose of Africa and the Oriental Region, but the Bornean representative has not the snake-killing propensities of some of its relatives.

Borneo possesses an unmistakable Bear, probably the smallest form there is: there are two kinds of Otters, a most offensive smelling Badger, a Ferret Badger, a large Marten and a Stoat which do not call for particular mention.

Ursus (Helarctos) malayanus Rafines.

HONEY BEAR, SUN BEAR: Malay: Bruang: Iban: Jugam: Murut and Tagal: *Bawang*.

This is one of the smallest of Bears and is covered with short, coarse shiny black hair except for the snout, which is grey as far back as the eyes, sometimes enclosing them in rings like spectacles; there is also a yellowish white, sometimes almost orange, usually V shaped patch on the throat. It has a large broad head, comparatively thin neck, narrow chest, long bow-legged forelegs, high shoulders, rather big stomach, very short hind legs, low, rounded hind quarters and the shortest of tails. Like all the bears its feet are plantigrade, provided with long curved claws which, combined with the bandy forelegs and rather inturned toes, give it a clumsy, rolling gait accentuated by holding the head low and swinging it from side to side as it walks. It is at all times a very restless animal, never still, its head and nose particularly being always on the move. The eyes are small and protruding, the ears very small and rounded,

the tongue surprisingly long when extended. Very old specimens become very wrinkled and almost grey on the forehead and crown, which gives them a most ludicrous, worried look.

The yellowish white patch is often comparatively larger in old animals but not always so; in the young it is usually V shaped set with the point backwards and other examples show various stages in the opening out of this V into a diamond shaped patch, the yellowish white arms of the V getting broader until in some cases there is a complete diamond. I should add that in all cases this yellowish white patch has a number of small faint black spots.

Usually the Bear presents a very broad head and an absurdly thin neck but when serious it may sit up on its hindquarters and stretch its head, the skin on the sides of its neck becoming flattened out like a Cobra's hood and serving to show off this throat marking. Some Dayaks say there is a larger kind of bear with no markings on the throat, and very rarely a completely reddish brown one is said to be encountered.

This species even when young is bad tempered, being a highly strung, sensitive, nervous animal easily frightened by anything unusual; when suspicious it sits erect on its hind quarters or even stands erect on its hind legs, makes a few passes with its forepaws, ~~breaks into a harsh bark and rushes at its opponent in an attempt~~

to bite. It is not really brave and I have seen one scared by a full grown "Brok" (*Macacus nemestrinus*—The Pig Tailed monkey) of its own size, the Bear putting its head between its forelegs and making peevish noises. In a wild state it sometimes runs off with a loud snort and being a clumsy beast is just as likely to run into some unoffending person, a Dayak in one case having been thus severely bitten. When wounded it may charge and Dayaks have occasionally fought and overcome it with their hands. Bears can also be very playful, two together getting on well and even alone it will play with leaves, bits of wood or even its own foot; when pleased it makes a continued gurgling noise, often with one foot in the mouth as if sucking it. In captivity it is friendly with other animals such as Mias, Gibbons except at feeding time: the Mias is too quick for the Bear, fends him off with long arms if attacked or presents a shaggy back on which the Bear makes no impression.

Bears are wonderful climbers, swarming up a thick tree trunk in a series of jerks, the widespread, bow-legged forelegs encircling much of the trunk and pressing the chest close against it, the hind legs supplying the motive force; they do not dig their claws straight into the bark as do some Cats and Squirrels, the claws just preventing the Bear slipping and making it most difficult to detach.

only very occasional success: young ones that have fallen 20 ft. or so seem none the worse for it. There is great wrist play which helps them in climbing and hooking themselves over thin branches. Food is sometimes held in one forefoot, the sole bending round to almost touch the undersurface of the arm.

Almost anything serves as food, fruit of all kinds, meats, cock roaches and various insects, milk and anything sweet, captive ones taking scorpions, centipedes and any snake, poisonous or not, animals which would have given them a nasty shock had the poison organs not been previously removed. In a wild state they are fond of honey and certainly ants, their powerful teeth and strong claws soon enlarging the smallest of cracks in a log. Most animals, except true Rodents, presented with a flat surface, such as the palm of ones hand, are unable to bite it except where uneven or on the edge; not so the Bear who turns up his rather long nose and can gnaw through the flat surface of a plank.

The young are usually born singly and apparently at no particular season, being sometimes laid in a hollow tree or between the buttresses at its foot. The disposition of the mother varies, she usually but not always being concerned in making her own escape and hoping the young will follow. They are said to make rough nests in trees but I have never seen them. Captive bears were very fond of playing about in shallow water: they could probably swim if given the opportunity.

***Lutra sumatrana* Gray.**

THE SUMATRAN OTTER. Malay: *Bran Bran*; Tagal: *Ketong*; Dusun: *Bongkol*.

Two species of Otters occur in Sarawak, the present species having the usual claws on its fore and hind feet whilst the other species has no sharp, projecting claws, but only a series of very small rounded nail-like objects in their place.

The former species resembles the European Otter and is a uniform fawn colour, lighter below; it is of interest to note that just as in *Cynogale bennetti*, the Civet that has taken to an aquatic life, this Otter has very wide spread forefoot with large fleshy pads. Its whiskers are also like those of *C. bennetti* but less prominent.

Though Otters are extremely common, both in fresh water and on the sea-shore, their nocturnal habits and general wariness prevent them being often observed. The head is very rounded, muzzle broad and blunt, eyes small and beady with a general vivacious look that does not belie their activity. It is not uncommon to see one or both parents followed by three or four young crossing a path nor is it difficult to catch the offspring; they soon become most tame and make good pets but set up a squeaking noise all day until fed, stowing away such quantities of food that they eventually die of over-eating. Contrary to some statements, the young swim the first time they take to the water and soon become

quite swift on land; the gait is a quick but rolling rush, the body seemingly extending on each side beyond its limbs and giving a most nautical aspect to its movements. In the ordinary way it walks with its head down, back arched and comparatively short tail stretched downwards behind.

Very little is known of the habits of these animals, the average Malay never having got beyond some Rabelian stories connected with the number of its wives.

Lutra cinera Illig.

THE CLAWLESS OTTER.

As I have mentioned this animal is notable for the absence of its claws: size is a very variable factor but this species though equally common does not seem to run as big as the other species. In colour the adults are usually greyer but immature specimens are dark with a lightish patch on the throat.

They may be met with on the sea shore or far upriver in the small side streams; this is the best place to see them, for the roar of the water drowns the noise of ones movements and the otters may be easily observed nosing about the water's edge. Sometimes solitary, sometimes in families of 5 or 6 they all take to the jungle in a sharp clumsy gallop on being disturbed, for the water as a rule is too shallow for them to find refuge. Most natives will not eat them and they are very tenacious of life, sure to escape if not killed outright. When surprised they sit upright on the hind legs and tail, the short forepaws hanging down free but in walking they assume the usual gait, head held low and back high arched and rounded.

Mydaus lucifer Thos.

THE BADGER; *Teludu*; *Sigoeng*; Kalabit: *Dengan ruit*.

The Badger is a comparatively small animal up to about two feet in length, black except for a white crown and complete or incomplete rather narrow white stripe down the back onto the short tail; the head is thickset, snout pink, hard and rounded, the claws especially on the forefoot being long and curved, giving a rather Bear-like impression. Frequently on the nape of the neck there is a marked whorl in the hairs, sometimes two whorls but sometimes no whorls are recognizable so that neither this character nor the variable size, nor the varying continuity of the white line down the back are safe guides in classification, a fact which has caused much confusion.

This is one of the most notorious of Bornean mammals and much remains to be found out about it; a single specimen was taken on the "mainland opposite Labuan" and given the above name. The late Dr. J. C. Moulton obtained some skins made into seat mats at Mein in the Kalabit country, Ulu Baram, and

to these gave a different name, whilst Dr. Mjoberg visited the very spot and obtained the whole animal, to which he gave yet a third name. A review of all these and some from S. E. Borneo however shows them to be really all the same and they are better united under the original name.

As far as I know it is only found in the one place in Sarawak—at the Kalabit house of Mein—and the Badger lives not in caves as sometimes stated but in holes in the ground dug either by itself or by the Porcupines with whom it is sometimes found living. The Kalabit dogs find the entrance to these earths and the smallest dogs will eagerly enter and bay the quarry underground whilst the men dig furiously down from above with the aid of sharpened sticks. Earths however are rarely found and not always occupied; according to Horsfield there is a globular smooth side chamber several feet in diameter with a passage about six feet long to the outside world and I agree with him in not finding the burrows at a depth of more than about two feet.

It is a strange looking animal not more than a foot or two long, short legged but it walks quite swiftly with the body well off the ground; when actually handled it may growl and attempt to bite but when merely molested it raises the tail straight up in the air, turns the head away from the intruder and may be induced to eject to a distance of some six inches or more nearly a teaspoonful of pale greenish fluid, the smell of which was nearly enough to make sick a neighbouring Dayak and also some Kalabits, who aren't as a rule particular. They say dogs are sometimes asphyxiated in this way or actually blinded if struck in the eye by the discharge: where numerous in other parts of the world they can become a nuisance by passing under houses at night but were put to some account in old Javanese Sultanates in the making of scent in suitable dilutions. The discharge apparently comes from paired anal glands and hydrogen sulphide is a prominent component; Kalabits nevertheless eat the animal and value its skin for sale to down country people, who mix the shavings with water and drink them as a cure for fever or rheumatism.

The Badger much dislikes the light and retires under a log when in captivity. One used to dig a hole and remain with its head buried. Only the fore claws are used in digging, working backwards and forwards not sideways like a Mole; the nose was distinctly pig-like with a hard ridge round the rim with which it loosened the earth at the apex of its pointed diggings; the snout overhung the nearest point of the mouth by three quarters of an inch. A mother and one young one were placed alive in closely-made separate bamboo cages where they were quiet enough in daytime but

the young one soon scratched its way out in the night; the mother was subsequently placed in a tin and her scratchings at night could be heard in many parts of the house by Kaiabits anxious for sleep.

They would not touch food in the daytime but worms, grasshoppers, cockroaches and particularly the entrails of fowls dropped into the tin of an evening were always consumed by the morning; the one specimen lived thus for over a week and was allowed to go for an hours walk every evening.

Their external anatomy was peculiar, very short legs, hind feet plantigrade, thickset body kept off the ground, absurd little tufted tail, head raised, small eyes and ears and large, rounded, hard, pink snout; the female was peculiar with a pair of inguinal teats (in the groin), none on the stomach but two pairs a long way forward on the breast.

The animal has an unusual distribution; Mein is over 3000 ft. but it is found at much lower altitudes in N. Borneo and S. E. Borneo; it is also found in Java, Great Natuna Island, but not in the Malay Peninsula.

Nesictis (Helictis) everetti Thos.

THE FERRET BADGER.

This is a curious animal about two feet long and with a comparatively very long tail (about 6 inches) for a Badger; it has the usual foul smell of the Badger-Stoat tribe but more resembles the Badgers in the fleshy pig-like snout and long rather curved claws on the forefeet.

As far as I know it is in Borneo confined to Mt. Kinabalu, where it was at one time said to be common, and does not occur in Sarawak nor in Sumatra nor the F. M. S., but its relatives are found in Java, parts of India, China and in Formosa.

The general colour is brownish grey, quite brown on the crown, greyer on the tail; the underparts varying from ochraceous to dirty whitish. A prominent feature is a narrow white stripe beginning at the back of the crown and losing itself about half way down the back, being actually more often discontinuous than not; the face markings are distinctive, two white spots between the eyes, the spots confluent more often than not but in some cases, according to Everett, absent altogether. The white markings behind and below the eyes are also very variable.

Thomas has separated the Bornean form generically from the Indian and other ones on rather minute differences, largely dependent on the shape of the baculum or penis-bone, a character subject to great variation in other groups.

Putorius nudipes Cuv.

THE STOAT. Malay: *Munsang pisang*; Kayan: *Chok putch*; Kenyah: *Hangangan*; Kalabit: *Toh*.

This is a small and very furry Stoat with the usual offensive smell of its kind. There is no mistaking it, for above and below

the colour is yellowish buff with the head, including the chin and ears, pure white, the tail being occasionally more yellowish at the tip.

Solitary individuals are taken in various places at wide intervals but it is nowhere very common and little seems to be known of its habits. It appears to feed on fruit to some extent. A single specimen was seen running about on the bank of a stream and it is noteworthy that the feet are webbed half way along the digits suggesting mildly aquatic habits.

Mustela flavigula.

THE MARTEN. Iban: *Bragok*; Kenyah: *Pasua*; Murik: *Bawah*.

This Marten is a comparatively large animal with a long tail. The head and shoulders are pale fawn colour streaked with silvery hairs the underparts similar but without the streaking, the back and hind legs dark brown, the tail black. The most distinctive feature is the pale yellow chin, throat and chest, the neck having a dark brown line down each side bordering the yellow.

The pointed alert face, long tail and pronounced musky smell are typical of the Marten. It is mostly arboreal, generally to be seen high up in the tops of the tallest trees but apparently descends to the ground at times, when it is reputed to attack both Pigs and Deer, fastening on either to the eye or underneath the belly and even causing their death by sucking their blood; they must attack young animals for it is difficult to imagine so resourceful an animal as a Pig being thus overcome in his prime.

A specimen shot in April appeared to have been suckling two young ones.

I observed one on a sand-bank beside a stream one evening: it carried the head very high, the neck long and sharply arched, showing the yellow underside very plainly: the forelegs were very bowed and the animal progressed in a series of rather awkward hops as if not very used to the ground. The back was fairly straight but the long tail carried at an angle of about 60°, the tip down curved and hook-like.

***Cyon rutilans* Mull.**

HUNTING DOG. Dayak: *Pasun*.

There is one specimen of the Jackal, *Canis aureus* in the Leyden Museum, said to have been collected by Diard in Borneo. No further specimens have been seen or obtained but Dayaks and Kayans still assert that it does occur. It should be remembered that "Pasun" is the name applied by Dayaks to the pack of hounds usually associated with their legends of "Gerghassie," the Demon Hunter. If there be a Wild Dog in Borneo it is more likely to be a representative of the Malayan Hunting Dog than the Jackal of India and Ceylon; actually there is almost certainly no Wild Dog in this country.

Family VIVERRIDAE.

(Civet Cats with non-retractile unsheathed claws).

- A Tail as long as body
 a Size large in adults, 4-5 ft
 a¹ General colour black Binturong Arctictis binturong
 a² General colour dark brown, face white Galling Paguma leucomystax
 b Size medium total length about 3 ft.
 b¹ General colour grey Munsang Arctogale leucotis
 b² General colour darker fawn do. Paradoxurus hermaphroditus
 c General colour dark brown Hemigale hosei
 c¹ Back with transverse stripes on general buff colour Pangkat Hemigale hardwickei
- B Tail shorter than body
 a Black and White markings on throat Tengalong Viverra tangalanga.

Mungos (*Herpestes*) *brachyurus rajah* Thos.THE MONGOOSE; Iban: *Dumbang*.

A medium size Ferretty looking animal, really black in ground colour but with a varying amount of yellow or rufous ticking, particularly on the flanks and tail, so that some specimens are almost wholly rabbit coloured whilst others in the right light look almost black on account of their fewer and darker tickings. The tail is characteristic, rather short, the hairs sticking out at all angles, long at the base and short at the tip giving the tail a very blunt tapering appearance. It has a curious shaped head, very big and round from the front view, small thick ears, little eyes very light, almost sandy, set close together and with tiny pupils, the whole capped with a pink tipped nose more or less movable. The claws are long, the digits of the fore and hind feet greatly elongated, with bare pads reaching to the wrist and heel; there is furthermore a slight webbing to the toes.

Things animate do not as a rule move swiftly in the East but the "Dumbang" has one of the best claims to be Borneo's little Speed King; occasionally it walks, even runs at times but mostly gallops (or may be does all three together) but to see it shooting in and out of holes, sliding round corners and twice round its cage in no time gives one an impression of a few passing shadows and would leave one quite unable to say what the animal looked like if one didn't know beforehand; one spent a whole afternoon skating

round a large cage before it was sufficiently exhausted to stay still for its picture and proved one of the most difficult animals to photograph.

Though so restless it proved to be a most purposeful animal and cheerfully bit its way through two thicknesses of wire netting in a night, spreading destruction among some Mouse Deer and Prevost's Squirrels that it met outside; for all that it was not always a savage animal and when handled never bit its keeper in spite of easy opportunities, in fact it was a particularly fearless animal in all its doings. Food consisted mainly of fish and the only wild one I have seen was running about in and out among the stones on the bank of a stream; the stomach of this one was crammed full of Cockroaches and this species is recorded as less partial to Snakes than its better known Indian relative. It is further said to be partly aquatic and to fluff itself out when molested until all its hairs stand out on end; it is certainly a good climber and has rather surprisingly long legs compared with Stoats and Martens whose characteristic smell is furthermore not very noticeable in the Mongoose.

Two together were most amusing and for long kept up a continuous cackling like a Jay's alarm; actually they did not quarrel often but gave vent to most malignant explosive spits when really angry. There is something almost vulpine about this Mongoose, its facial expression of malignancy, shrewdness and alertness being a fair indication of its character.

Thomas proposed two races, *rajah* from the lowlands and *dya-corum* from the mountains, the former having light yellowish and the latter warmer rufous tickings. It is only fair to say further material was awaited and whilst I find the distinction good enough as regards colour it is not so distributionally, for we have from Kuching two dark specimens resembling most of our mountain specimens and a very lightly marked one from Mt. Dulit recalling the numerous lowland examples.

***Herpestes semitorquatus* Gray.**

MONGOOSE. Iban: *Dumbang merah*; Sennah: *Sengangupp*.

We have one specimen of this from 4000 ft. on Mt. Dulit; it has the tail of *H. brachyurus* but its uniform yellowish buff colour above and below recalls *Putorius nudipes*, from which the larger size, absence of white face and the broader tail at once separate it; the soles of the forefeet are not elongated as in the "Dumbang."

There is here also a specimen in spirit from Kuching differing in no way from the Dulit one; Dr. Abbot took several in the Ulu Kapuas, whilst one in the Leiden Museum collected by Von Hasselt at Sukadana in S. W. Borneo is redder still and even more like *Putorius*. It has been taken on Mts. Poi and Penrissen but is not confined to mountains as a high altitude form of *brachyurus*.

Herpestes hosei Jent.

MONGOOSE. We have no specimens of this species but it is stated to differ from *brachyurus* in its skull, the lower jaw particularly and to be more brownish red with shorter hairs and less curved claws.

I have seen the type in the Leiden Museum, an adult female from Baram, but it did not differ externally from *M. brachyurus*.

Cynogale benetti Gray.

THE OTTER-CIVET. Iban: *Jellu labi* or *Padi bahru*; Kayan: *Dingin*.

This is a curious, very thickset, aquatic animal, a short tail, comparatively short forelegs but rather longer hind ones giving the back a high arched appearance as it stands up; the general colour is a very dark brown much grizzled with white above but not so much below and on the tail, which in a few cases has a suggestion of rings at the root. There are many peculiar features about it, notably the whiskers which almost recall Bairnsfather's "Old Bill;" they are yellowish white and very numerous, those from the snout being fairly long but those from a patch under the ear being the longest and reaching back to the shoulder about 6 ins. in length: Like the Otters, the upper lip is very thick, rounded and overhanging, it is said acting as a cushion to keep the water out of the mouth. The actual nostrils are peculiar, for instead of opening forwards in the same direction as the snout they are situated on top of the nose (just as in the Crocodile) and are provided with a valvular apparatus to keep the water out. Finally the feet are unusual; the claws on the forefeet seem at times partially retractile but not into a sheath and most remarkable is the wide expansion of the four digits—the first (really of course the second) being normally expanded in a straight line from the fourth *i.e.* making an angle of 180° with it; in addition the forefeet are webbed for the proximal half of the digits. The hind feet are similarly webbed but the digits more or less parallel and but little if at all expanded; the digits of the forefeet are capable of great flexion as the beast walks, those of the hind feet much less so.

In captivity a beast was distantly savage and uttered an explosive spit when annoyed; it would not eat various dead birds or a squirrel and only very reluctantly took a few pisangs, but frogs were taken with avidity, also prawns and a few fish (such as "semilang") but most small sea fishes were refused; it used to drink considerable quantities of water but I never saw it swim in the tub provided for that purpose. As a climber it was only fair and rather uncertain, in fact it ascended a sloping branch with considerable difficulty, frequently slipping backwards, but was quite ready to scramble on top of a couple of boxes and from there to a horizontal branch, where it would spend the day asleep curled up in the most extraordinary position, its head and nose pointing straight

down towards the ground, possibly because it objected to the light. Ordinarily when walking the head and tail are carried low and the back is high arched.

Nothing much is known of its habits in a wild state but its whiskers are presumably tactile and enable it to detect its food under stones and in crevices whilst the position of its nostrils on top of its snout suggest that it may lie in wait for its prey with only its nose showing. Comparison has been made between this animal and the Otter but what habits they have in common have apparently not gone very far in evolving similar structures.

Apparently two young constitute a brood and they have been taken in May: the kitten is brown without any grizzling, some grey on the forehead and ears with two longitudinal stripes down the sides of the neck extending underneath the throat.

Arctictis binturong Raffles.

BEAR CAT; Malay: *Binturong*; Land Dayak: *Tun*; Dusun Saip: *Pasiu*; Kayan: *Khaitan*.

This, the largest of Civets, is clad in long black hairs with a varying amount of dark yellowish grizzled ones, some specimens being almost yellowish and none entirely black as there is always some grizzling on the head. The long tail and the small, rounded, tufted ears with white hairs round the rims together with the long white stiff whiskers and shorter black ones are characteristic. A specimen in captivity got steadily more grizzled. This character is variable culminating in a specimen from Mt. Dulit covered with dirty white or yellowish hairs, so that it was more white than black, except on the tail.

The shape is peculiar, the head very small and so little marked off from the thick neck that an ordinary collar will not hold it. The animal is plantigrade and walks normally on the ground, not in a series of hops as do many other arboreal forms: the back is high arched and the tail carried outstretched but with the tip curled. It is however a nocturnal beast climbing stealthily about at night and using its tail as a break in descending: immature specimens are certainly able to sustain their own weight hanging by the tail. Like the Ant-eater the soles of the hind feet are apposable to assist it in climbing. The hair is very long and thick, the animal panting heavily in the heat of the day though no doubt warm enough at night—not that other nocturnal animals are as thickly clad.

It is a fierce looking animal when roused and only when taken young is it easily tamed: freshly caught it is quite equal to tackling a man for it has a most powerful chewing bite: adults become only fairly tame even after a long time. When annoyed it utters a low growl followed by an explosive spit. In spite of this its favourite food is bananas and many is the bunch that has been eaten during the night hanging up in solitary houses: the mouth is quite small for such a large animal, scarcely accommodating a big pisang of which it squeezes out the contents and throws away the skin. It

will eat a bird, such as a Swift and a Moorhen, but a small Squirrel (*Sciurus notatus*) lived easily in the same cage for a fortnight and then escaped; a frog was refused in favour of a pisang. A savage one fresh caught that had not fed for four days took no notice of a live fowl, which was removed after two days and nights. It took no trouble either to avoid or attack a snake (*Dryophis prasinus*) and Ridley records that it is not a snake eater, covering its face with its paws when presented with one. The claws are not retractile but there is great wrist play, food being held either between the fore paws or in one "hand" with the palm bent round almost touching the under surface of the forearm; with this amount of play the "Binturong" can make a deep scratch. Sometimes it smells very strongly but it is a cleanly beast, usually depositing its faeces in the same spot in its cage. On encountering a half grown Bear cub in assumed a cat-like altitude, back high arched and all four feet close together.

It has lived for as many as fifteen years and is easy to keep once past the initial stages; having settled down it takes an easy going outlook on life and a "Munsang (*P. hermaproditus*) shared its box with impunity, often lying on top of its neighbour.

A form *pageli* was described from Sandakan and has been recorded from Saribas: it differs from the ordinary Binturong by no external characters but in the shape and size of the bullae of its skull and its teeth, which are smaller and more rounded.

Hemigale derbyianus Gray.

CIVET CAT. Iban: *Pankat tekalang*; Kayan: *Padungan tana*; Kalabit: *tekalang alud*.

This curious animal is rather larger than a domestic Cat and is coloured greyish buff with a lighter more buff underside, the skin there having a pinkish tinge which fades after death. Its chief characteristic is a number of black or dark brown *transverse* markings across the back originating from two longitudinal stripes down the neck, attempting to throw off posteriorly two transverse stripes, followed by five broad transverse bars on the back extending on to the flank, where they are thinner, paler and inclined to bifurcate. The tail usually has one incomplete bar the rest of it being dull black: there are a number of dull brown markings on the head. Its eyes are enormous and the animal being nocturnal it is most often seen in the rays of a lamp when its two shining eyes are big enough to do duty for a Deer.

A marked characteristic of this and the next species is the very long neck; the stomach of one contained the remains of some worms and some ants. The kitten has the same colour pattern as the adult and a foetus was taken in February.

"Tekalang" refers to the instrument shaped like a policeman's truncheon but much ribbed and used for rendering bark cloth soft; "Padungan tana" suggests I believe ripples on the land and "alud" means a boat, referring here to the transverse arrangement of the seats.

Hemigale hosei Thos.

Dusun: *Tani*.

The shape and size and particularly the long neck resembling *H. hardwickei* and the general colour being dark brown or dull black it might pass for a melanism of this species were it not that the ears, cheeks, some patches on the muzzle and the whole of the undersurface are white. It has the same whorl on the shoulders and the same black ridge down the neck as in *hardwickei*; sometimes white hairy ears as opposed to the grey sparsely covered ones, the nasal stripe broadening out on the forehead: the vestigial eye stripe and particularly the white on the muzzle at the base of the whiskers differentiate it from *hardwickei*. The whiskers are moreover very long, reaching back behind the ear, much longer than in the other species.

We have one specimen from 4000 ft. on Mt. Dulit and there are three more in the British Museum together with one from Kinabalu.

Arctogale leucotis Gray.

CIVET CAT. Malay: *Munsang*; Iban: *Munsang akar*; Kayan: *Munin*.

This Civet Cat is usually about the size of a large house cat with a very long tail, longer in fact than the head and body together; the usual colour is grey or greyish brown with a dark brown tail and three broken (occasionally unbroken) dark lines down the back, starting from the shoulders or further back. The underside is lighter and there is a very characteristic white line down the middle of the face. The eyes are prominent, black and beady, the muzzle rather elongated and pinched in to form a snout.

Like most Munsangs it is nocturnal and arboreal, few animals that I have seen being better climbers: it is said to be able to walk along a strand of wire and I have seen it using some very thin sticks which only made it do a few extra acrobatics without falling. As a rule it walks upright but I have one picture of it underneath its perch using its tail in support, the only time I have seen it do so; on the other hand it sometimes used to walk about upside down on the wooden roof of its cage like a fly on a ceiling, except that the Munsang was making use of the cracks between the planks and its tail hanging down free. On the ground it progresses in a series of hops.

It will eat almost anything and is fond of bananas (skin as well), frogs, various birds, a Flycatcher (*Terpsiphone affinis*), an Ant Thrush (*Pitta* sp.) and a Blue Bird (*Irena violacea*) and a "Flying Fox" were welcome but it refused a Hornbill (*Anthraceros convexus*); even Dayaks won't eat this bird, so nauseous is the smell and the Munsang rolled it on the floor of the cage, generally fouling it. It would not allow a harmless green tree snake (*Dryophis prasinus*) to get away and put a foot on it to haul it back: the snake repeatedly missed the Munsang in striking and the two at last faced each other about 6 ins. apart, the snake head in air, when

with a deceptive quickness the Civet leant casually forward, caught the snakes head far back in its jaws, killed it with one bite and then ate it.

When taken young it makes a good pet but if older is savage and intractable, very old males reaching an enormous size, nearly as large as a " Binturong." It makes a harsh vehement expectoration in the back of its throat which seems to shake the whole animal when annoyed but has also a petulant high pitched scream used only when it has exhausted its vocabulary in the former way; like most of the family it is provided with scent glands and gives off a strong not unpleasant mousey smell. As with all the long tailed Munsangs if picked up by the tip of the it is unable to bend round and bite.

This species is one of the omen animals of the Kayans and Kenyahs though not of the Punans and Dayaks; to the two former tribes it signifies sickness and they particularly object to the noise of it squealing though it is luckily ineffectual after certain good omens.

Paguma larvata leucocephala Gray.

CIVET CAT. Iban: *Galling*; Dusun: *Mengulok*; (Saiap) Sennah: *Toon berubok*.

This is, with the Binturong, the largest of our Civet Cats, easily recognizable by the yellowish white head, ears, throat and whiskers, the neck and shoulders being dark brown, the back dark fawn coloured, the underside lighter and the long tail darker with a yellowish white tip; in one specimen there is no white tip.

The hairs are variously arranged, sometimes with no whorls but usually two just in front of the shoulders, making a longitudinal ridge up the neck and a shallower V shaped ridge where the neck hairs meet the backwardly directed ones of the forehead and ears.

The Bornean form is the largest form, except perhaps *P. musschenbroeki* from Celebes, and is found in Malaya and Sumatra but not in Java. Two young, said to have both had the white tipped tail were found by Everett in a female in October, 1895.

Captive ones were uniformly docile even for Civet cats and the young and half grown ones were easily tamed; though so quiet by day they used to get out at night, exhibiting in his respect a much greater ingenuity than their relatives, in fact their sluggishness by day was rather deceptive. Like the Binturong they showed a preference on the whole for bananas as food rather than fish or dead animals.

Paradoxurus hermaphroditus sabanus Thomas. (P'ate XIII).

CIVET CAT. This is one of the smaller, long tailed Civets and is very variable in colour: the back is fawn coloured with dark indistinct longitudinal markings, sometimes as a continuous line and sometimes as an indistinct line of confluent spots. The ears, neck and tail are black, there are some white markings on the forehead, cheeks and under the eyes; the length of the lines

down the back is very variable, in one specimen there are faint neck rings recalling those of the "Tengalong" and in another there is a yellowish white tip to the tail, just as in *Paguma (Paradoxurus) leucomystax*.

It is a common animal and may often be seen on the edges of river banks at night.

Lonnberg has separated certain animals from the Barito as *P. h. baritensis* on account their larger size but this is variable and it is hard to recognize two races of this Palm Civet.

In habits it is very like *Arctogale leucotis*, mainly arboreal with a very long tail, making the same noise when annoyed and with the same explosive "spit" that seems to shake the whole animal when it is thoroughly vexed. Fruit or meat from the food as in *Arctogale*, to whom it is quite an equal in climbing acrobatics, making the same use of its tail not as a true prehensile but as a balancing, steadying organ. The different proportions of the legs, and the general altitude assumed is markedly very different from the more terrestrial *Tengalong*.

Linsang (*Prionodon*) *gracilis* Horsf.

THE LINSANG. Dusun: *Gurat gurat*.

This is a much smaller animal than *Hemigale* but it has the same long neck and has a comparatively longer tail with seven dark brown bars; the body has five broken, transverse bars on each side, not joining across the back as in *Hemigale hardwickei* but each bar with a suggestion of a backward prolongation at its inner (or upper) end suggestive of two parallel dorsal stripes. As in *H. hardwickei* there are two dark longitudinal lines down the neck which join onto sections of these transverse bars and give rise to what might just as easily be called longitudinal broken flank stripes. Some are more heavily marked than others, the colour pattern is the same in the young and the general ground colour is a dull yellowish white.

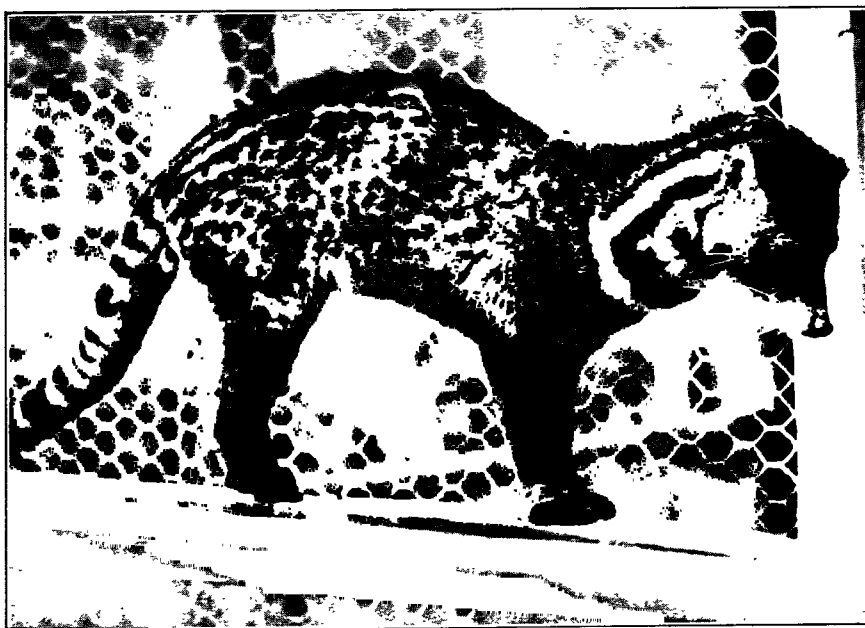
Its habits seem to be unknown but it has been taken on Dulit and Kinabalu at about 3000 ft.

A live female taken near Kuching in February refused all food, fish, frogs, squirrels, birds or even cockroaches; it appeared to have had two young and the two inguinal teats were exposed and worn, whilst the abdominal ones were disclosed on turning the hairs back. Not much was observed of its habits save that it ran about at night, was a good climber, had enormous ears, large eyes and a menacing aspect altogether; it slept with the long tail curled round its fore-feet and face. The claws were wholly retractile and the animal made no sound or smell.

Linsang is remarkable first for the characters it has in common with *Hemigale* and secondly that in external appearance it almost exactly parallels the African Viverrine genus *Genetta*.



The Civet-Cat (*Paradoxurus hermaphroditus sabanus*).



The Civet-Cat (*Viverra zibethica*).

***Viverra zangara* Gray.** (Plate XIII).

CIVET CAT. Sarawak Malay: *Tangalong*; Iban: *Sinang*; Land Dayak: *Kasui*.

This is one of the comparatively short tailed Civets and is larger than a house cat. The general colour is grey with a well marked black line down the back and tail, a series of longitudinally arranged more or less confluent black spots completely covering the flanks. The throat is very characteristic, having in the adult conspicuous black and white markings; there are three parallel black patches starting just behind the ear, going down the side of the neck, leaving pure white interspaces—the two lower markings turn at right angles, broaden out and meet across the white underside of the throat, the upper marking taking the turn but not quite joining or doing so very indistinctly; the chin and rest of the underside are grey with numerous black spots. The head is dark grey with the base of the whiskers whitish, the ears rounded with a white border; there is as a rule a double line of black spots down the middle of the neck, the two parts converging into the black dorsal stripe. The sides and underneath the tail are grey with broad bands of black, complete distally; the feet grey and spotted, the claws very small. Not all Munsangs in life have the erectile crest of upright hairs down the back, and so very noticeable in this species.

This animal is less arboreal in its habits than the "Binturong" and others, as its short tail would seem to indicate; it is however much more carnivorous, only after some time in captivity taking to pisangs: raw fish and raw meat it would not touch but fur or feather was always taken though it failed to catch a Squirrel (*Sc. notatus*) loose in its cage, even when the Squirrel used to snuff the Civet's tail. A dead Lemur ("Oukang"—*Nycticebus tardigradus*) was eaten except for its head, just the particular part it usually first goes for in other animals; a dead Flying Lemur (*Galeopterus temmincki*) was neatly skinned inside out, the leg bones left attached and the rest eaten. It also attacked a Porcupine and pulled out a number of quills. A Pheasant Cuckoo (*Rhopodytes sumatranus*) it was shy of eating but a small Woodpecker (*Iyngipicus aurantiiventris*) and a Bulbul (*Pycnonotus analis*) were eagerly eaten; live snakes were attacked and eaten, all except the head of a Black Cobra, whilst frogs were eaten with great avidity, as many as a dozen for a meal. Scorpions and Centipedes without their poison organs were also eaten with great ferocity. The fondness for Frogs together with an enlargement of the sides of the upper lips to produce an overhang as in an Otter (where it is supposed to keep the closed mouth water tight) all suggest that its habits are mildly aquatic; this overhang of the upper lip is absent in the young. It is also very fond of water and drinks a good deal, rather often. It is less sensitive to the sun than many of its tribe and doesn't retreat at once to a dark corner: it is a compara-

tively poor climber getting little assistance from its tail or claws; neither does it attempt to hold down its food nor use its feet to stop stray frogs jumping away, just making a quick and usually successful snap at them. The animal is terrestrial, may be partially aquatic, carnivorous and probably by no means wholly nocturnal.

This is one of the animals used by Malays for making "obat" and also perfume, the excretions of the anal glands—according to them in the ♀ only, the ♂ being useless—being separated from the faeces and giving the animal some pecuniary value.

Family FELIDAE.

True Cats with claws retractile within a sheath.

- | | | |
|--------------------------|--|-----------------------------|
| A Tail as long as body | | |
| a | Ground colour greenish yellow, black blotchings | |
| a ¹ | Large, exceeding 5 ft. from nose to tail tip | Rimau dahan F. nebulosa |
| a ² | Medium, less than 5 ft. total length | „ akar F. marmorata |
| b | Ground colour reddish brown, no black blotchings | ? F. badia |
| B Tail shorter than body | | |
| b | Size small, not exceeding two feet | |
| b ¹ | General colour reddish with black spots | Kuching batu F. bengalensis |
| b ² | General colour uniform umber brown | Jellu maio F. planiceps |

Felis (Pardofelis) badia Gray.

WILD CAT. We have no adult specimens of this cat, which is about the size of *P. marmorata* but much rarer. Wallace collected one in Sadong and Everett one in Baram, both of which were bright chestnut all over, darker down the back, light on the underside and white on the underside of the tip of the tail as in *Profelis temmincki*. It was thought at first to be the kitten of *P. temmincki* but adult skulls were obtained and in the flesh it lacked the distinctive four face streaks.

Like many of these Cats it is known from Indo-China and also has a gray as well as a rufous phase; one from Baram is ticked grey all over, slightly more rufous on the back and the tail almost rufous, a rufous line extending along the flanks, neck, limbs and tail at the junction of the under and upper surfaces.

A most peculiar kitten was brought in alive to Kuching and was included in the Museum collection on its death; it was completely black except for a few reddish hairs on its feet and flanks and a grey face with two black eye stripes. Certain skull characters led Mr. Boden Kloss to believe it to be the kitten of this species.

Felis (Profelis) temmincki Vig. and Horsf.

THE GOLDEN OR BAY CAT.

This large cat is almost as big as *Neofelis nebulosa*, the Clouded Leopard and is reputed elsewhere to be very fierce and a match for a Tiger; this is almost certainly incorrect for it is quite placid in captivity and was at one time thought to be the ancestor of the Siamese Cat, though this is not very likely.

The tail is very long and the animal varies from a complete yellowish buff with a dark line down the back to some which are ticked a rabbit colour (like the Kra or Long Tailed Macaque) or even completely dark grey with a dark line down the back; a most distinctive feature is four black stripes down the face with white in between.

They are known from Sumatra and are fairly common in S. China but I do not know on what evidence they are included in the Bornean fauna, though it seems to have been the custom.

There is no denying that but for its much larger size the above mentioned greyish form does strongly recall the domestic "Tabby" cat, complete of course with a long straight tail instead of the "kink," as in the domestic Siamese Cat's tail.

Felis bengalensis.

THE LEOPARD CAT; Malay: *Kuching Batu*.

The Leopard Cat is rather bigger than a domestic cat but has a comparatively short tail; the general colour is a pale buff, the neck and back streaked with discontinuous, longitudinal black markings, the flanks and feet with series of black spots, the underside white with varying black or dark brown markings. The face is prettily marked, two white eye stripes and two sets of black ones, the ears black, whitish at the base. As a rare variation specimens are occasionally taken in which the ground colour is grey or fawn coloured instead of buff, the pattern of the black markings remaining the same.

As Cats go this is one of the commonest in Borneo though not often seen for it is mainly nocturnal; comparatively small as it is, adults are so savage as to be quite untamable but kittens taken young can be turned into amusing pets. Apparently the mother accompanied by three or four young is sometimes met with and captured kittens, spitting and yowling with characteristic ferocity, are offered for sale by natives.

The rather large eyes, upstanding ears and perky expression are characteristic for there is nothing furtive about this species; it assumes a curious attitude when walking and standing still, the head and shoulders held high, fore legs quite stiff and straight, the back and rump sloping sharply away and the hind legs held somewhere out behind the body instead of directly supporting the weight of the hinder part, an attitude exactly portrayed in an illustration of Mr. F. W. Champion's remarkable work "With a Camera in Tigerland."

Even small kittens do not thrive on a milk diet and take to meat at an early age; a pretty and fairly tractable little Cat becomes a perfect fiend when presented with pieces of raw meat and domestic Cats—not at all conspicuous in his presence—give him a wide berth at this time.

Felis (Ictailurus) planiceps Vig. and Horsf.

FLAT-HEADED CAT. Iban: *Jelu maiiao*; Kayan: *Using*.

This cat is about the size of a domestic one but has a very distinctive square shaped, buff coloured head with two white markings over the eyes; the back is dark brown, the sides grizzled greyish, underneath white with light brown spots running into rings on the underside of the feet. The tail is very short and rounded, the same thickness at all points.

This cat is fond of fruit and also of fish, having sometimes been caught in the "bubu" or conical fish traps into which it may have got by accident or in an attempt at any easy meal.

A single kitten was born to one in January and the mother was not unnaturally very fierce at the time, though on the whole this cat has a reputation for being quiet and not very aggressive.

Felis (Pardofelis) marmorata Griff.

This very beautiful cat is much larger than a domestic one though considerably smaller than the Leopard. It is difficult to describe but the general colour is greyish buff with black markings on the head, black spots on the breast and long hair on the abdomen. There are two black longitudinal stripes down the neck and shoulders, one down the back which breaks up to go flankwards, some of the offshoots opening up to form buff coloured islands, each enclosed in a dark ring with light buff again inside; some of these islands are independent of lines and some are due to their curling round. The feet and tail have black spots, uniting into vague rings near the tip of the tail. The markings throughout are only roughly symmetrical.

Kittens are much more heavily marked on the back and sides with large dark brown markings separated by light buff and white markings; the tail is profusely ringed.

It is said to be very savage in captivity and doesn't live long; it is known to frequent clearings in the jungle.

Elliot in his monograph of the Felidae figures a red form of this cat but I have never seen a specimen.

Felis (Neofelis) nebulosa Griff.

CLOUDED LEOPARD. Malay: *Rimau dahan*; Iban: *Enkuli*; Kayan: *Kolih*; Tagal: *Takinan*.

The Clouded Leopard is a modified Snow Leopard, not quite as big as its better known relative but much the largest cat in Borneo. The ground colour is yellowish with two deep black lines down the back. To the flanks are large blotches of deep black enclosing a patch of yellowish hairs with a few black dots, very much as in *marmorata*, only the colours are brighter, the spots much larger

and closer together. The tail is comparatively very long, the ears small and rounded. I should imagine from its mottled colour that this is a most difficult beast to see.

A shy and retiring species seldom seen and of unknown habits; beyond that it does not attack men here and is almost entirely arboreal even the natives know little of it, though it is sometimes shot at night on river banks and very occasionally caught in snares on the ground. It is mostly found in old jungle but in some parts such as the Lawas District occurs commonly in "blucher" or secondary growth.

The canine teeth are much prized by Kayans, Kenyahs and others but not by Dayaks for ear ornaments, the roots of these teeth being decorated with beads and fastened together with a string of beads passing behind the wearers head and just long enough to permit the teeth to be inserted up to the root in special holes drilled in the upper part of the lobe of the ear; the points hanging downwards and forwards give the wearer a ferocious appearance and the wearing of this emblem together with others was said in old times to have indicated that the owner had taken a head. As much as \$20 and more is paid for a pair of long, subequal teeth; only the upper canines are used, not the lower ones, but although much prized by Kayans, they will not themselves shoot this animal and always obtain the teeth from the Punans or others.

Though perhaps commoner inland this animal occurs almost everywhere, even on Mt. Matang near Kuching, where there is once supposed to have been a black one; it is not common anywhere and owing to its retiring habits, the value of the teeth to the natives and the skin as seat mats together with the Chinese regard for bits of it as medicine, the Museum does not contain a complete specimen.

It has occasionally been taken captive and is not particularly fierce, whilst the young are easily tamed; its food is said to consist of small mammals and birds but the chipped condition of some of its teeth point to it having fed on larger boned animals. It is said comparatively speaking to have the longest canines of all the cats, placing it near the extinct Sabre Toothed Tiger (*Machacrodus*) in this respect. A fine photograph of one from Burma is given in the Journal of the Bombay Natural History Society—the animal attacked a woodcutter "crouched and approached him cautiously pushing a bundle of branches and leaves in front of it either as concealment or to puzzle its prey." It is further said to have taken cattle in that neighbourhood but its behaviour here is exemplary as it is not recorded as molesting children or dogs, much less man. A live one was once brought to Kuching but was cut up by the Chinese for "obat;" one shot realized \$30 in Song bazaar, being brought for the same purpose by a Chinaman.

It is said sometimes to construct a large nest of sticks in a tree top, whether as a place of rest or for concealment or both is not clear, but it has been recorded as suddenly sallying forth and taking a Kra Monkey, immediately returning to its lair.

Felis tigris.

THE TIGER. Kayan: *Lijan*.

A. H. Everett records a number of traditions, usually associated with caves, about this animal; notably that of the Limbang Muruts who have a Tiger's Leap. Various Simunjan Sea Dayaks at Pupok Hill and the Land Dayaks of Serambo—in fact almost anywhere one will find stories of the "Rimau Antu" mostly (as in the Pupok Hill and Bukit Rimong in the Ulu Mukah) of a flying variety that makes weird noises in caves during the night at certain seasons of the year but is nevertheless an object of considerable veneration to the Dayaks, who don't care about going near the places as a rule.

Real Tiger skins imported and made into war coats are occasionally heard of and are objects of such veneration that many natives will not enter the same house; charms of imported teeth and claws are also in evidence.

Everett describes a Tiger's skull in the Land Dayak house on Singghi not far from Kuching but the owners will on no account part with it, owing to the disaster which would inevitably follow and to examine it even is a matter of considerable difficulty. It is not known if it is fossil. It consists of just the skull $13\frac{1}{2}$ ins. long, the teeth and lower jaw being missing. The Singghi Dayaks to-day deny all knowledge of such a skull and I am unable to give further information about it.

ORDER VII DERMOPTERA.

(FLYING LEMUR)

Galeopterus variegatus borneanus. (Plate XIV).

FLYING LEMUR: Colugo; Iban: *Kubong Plandok*; Dusun: *Langah*.

Systematists have been at a loss where to place the so-called Flying Lemur but this curious animal has been generally put in a Sub-Order by itself: it presents so many Bat-like features (for the thumb of a Bat has the same function as the forefoot of the Colugo) that it has been regarded as the living representative of the ancestral patagiate form from which Bats have been derived; they have in fact passed through a somewhat similar stage.

It is a curious looking animal for the blunt, flattened head and the entire back are covered with a very soft woolly grey fur with which is irregularly intermixed a large amount of black and buff hairs giving not only a beautiful appearance but breaking up the general colour of the animal until it looks just like a piece of lichen or giving the same effect as stray shafts of sun light on the tree trunk to which it is clinging. The arms and legs terminate in sharp curved claws. The hands are joined to the neck and to the hind feet by a thin membrane covered with a darker fur than on the back and the tail is also included to its extremity in a pointed membrane extending from each hind foot.



The Flying Lemur (*Galeopterus variegatus borneanus*).



The Moon Rat (*Gymnura rafflesi*).

The aptness of the Dayak name "Kubong Plandok" becomes more evident if one holds the accompanying plate upside down when the hunched back and to a certain extent general appearance is characteristic of the Mouse Deer: it is not quite certain that the attitude portrayed is a natural one though the animal moved about and seemed quite at home. Wild it is usually found clinging with its breast to the trunk of a tree and is able to glide to the next tree trunk it is said as much as 70 yards away if it starts at sufficient elevation, on its arrival swarming up in a series of jerks, both hind limbs moving together: the limbs are very weak and will not support it upright on the ground. The tail at rest is always curled, the large membrane enclosing a hollow, the whole affair it is supposed serving as a rudder and to alter the plane of flight: there is no evidence that it is prehensile nor that the membrane is used for catching crepuscular insects in flight, as in the case of some Bats. The anus opens into a large pouch on the underside of the tail but this area is apparently not glandular though some specimens have a faint rather sweet smell whose of unknown origin. Stomach contents indicate that it is herbivorous or frugivorous, bananas being eaten fairly regularly in captivity whilst they are said at times to damage young coconut trees. Or some reason they do not live long in captivity but are very tenacious of life on other occasions. The comb like lower incisor teeth prize off pieces of banana which are squeezed against the serrated edges acting as a sort of strainer: these teeth may possibly be used as a sort of comb for the fur though they have not been observed in the act of combing.

There is usually a single young one though Horsfield has recorded two, there being a large teat under each armpit. The only cry I have heard from young or old is a kind of harsh grating squeak several times repeated, rather like the quacking of a very hoarse duck.

The "Flying Lemur" apart from not being a Lemur does not even fly but only glides with outspread membrane. Several races have been described, *hantu* from N. Borneo and *lechei* from E. Borneo but the Bornean Flying Lemur is very variable in colour and these races cannot be upheld: there is a curious brown or rufous phase characteristic of males only it is said, females sometimes approaching this shade but being always much paler than the males.

ORDER VIII. INSECTIVORA.

(SHREWS, HEDGEHOGS, MOLES).

Gymnura rafflesi. (Plate XIV).

MOON RAT. Malay: *Tikus bulan*; Brunei Malay and Kadayan: *Kedurna*; Iban: *Haji bulan*; Tagal: *Turu*; Dusun: *Temparulik*; Kayan: *Duroi*; Kendah: *Buri*.

The Moon Rat is a good deal larger than an ordinary rat, has a naked pinkish tail, short feet with subequal toes and a long pointed nose with wide pink nostrils which together with a rather abrupt forehead is very suggestive of a young pig; add

to this that its colour is usually white and the casual observer would be at a loss where to place the animal (so long as it was as far from himself as possible for it has a most offensive odour).

The iris is black, ear tinged with yellow, the nose pink, the feet paler and the claws light horn.

There is a short woolly yellowish-white underfur and a number of more sparsely distributed long coarse white hairs mixed, particularly posteriorly, with a smaller number of black ones. It is not found in Java but in Sumatra and Malaya they are I believe dark brown. We have only two parti-coloured ones from Kuching; these are dark brown except on the head, neck, throat and shoulders which are dirty white: there are two dark brown patches on the crown and just above the eyes, the proximal half of the tail being also dark brown and the rest white. The scaly tail has a number of very short hairs longer on the sides than above and below, one hair being inserted on each side of the root of the scale and one in the middle.

This is one of the most generalized Insectivores and is related to the Hedgehogs, Moles, Shrews, having really nothing to do with Rats. Its most marked characteristic is the awful smell proceeding from its anal glands and lingering in its box and on its skin for a long time after. It is nocturnal and I believe partly aquatic; in captivity it shows a great affection for its bath tub, gets right into it, and is fond of frogs and fish (cockroaches too). Its claws are grooved, a characteristic distinguishing fish eaters as a rule. Altogether it is dull and unintelligent, makes no noise but opens its mouth threateningly when disturbed and can give a very sharp bite; it is plantigrade and proceeds on the ground at quite a swift gallop.

So far as is known they are usually found in pairs, either under a fallen tree or in a hole in a bank and they may sometimes be seen about at night. The young appear to be unknown but a female in June had two embryos one about 1 in. long and the other somewhat smaller.

Dayaks tell a story how the *Gymnura* got its offensive smell. He was elected director of operations by all the animals in building a boat for themselves and caused them to fell a very large tree and shape it. He then said it was too big and a bit was shaved off and they had to do this so often that there was finally only a small stick left with which "Aji Bulan" began to pick his teeth, whereupon all the other animals fell upon him and smeared him with the sweat of their armpits.

***Hylomys suillus dorsalis* Thos.**

GROUND SHREW. Kiau Dusun: *Limpungor*.

I believe this animal is nearest to the Moon Rat (*Gymnura*) but is much smaller, the general colour very dark brown and the tail only about an inch long, in fact the whole animal is not much more than 6 inches in length. The underparts are dark greyish brown and there is the usual pointed snout, naked ears and longish

grooved claws on the forefeet. There is also a black stripe down the back but its extent is very variable though I believe always present to some degree.

In habits it is described as nocturnal or crepuscular, living in holes in rocks and very numerous on Mt. Kinabalu having been taken elsewhere only in the Merapok Hills as far as I know; usually it frequents the lower slopes but may reach as high as 5000 ft. Relatives are found in Java and Sumatra and I believe in the Philippines.

Family SORICIDAE.

Ground Shrews are perhaps less common in Borneo than most places, though they are not very noticeable anywhere. All are small, some very much so, some aquatic, some terrestrial but one rarely sees more than a corpse killed by mistake by some predaceous animal, lying in the middle of a path. Shrews on account of their musky odour—said to taint unopened beer!—are not eaten by other animals but may be killed in mistake for a mouse wherefore they are said to give rise to loud squeaks when pursued to warn their tormentor that he is on the wrong trail.

Shrews are remarkable mainly for their very soft fur and long, sharp pointed muzzle with mobile tip instead of the round blunted muzzle of Rats and Mice; they of course also lack the two large gnawing teeth of Rodents.

Many species have been recorded from Borneo often on single specimens and owing to their rarity it is impossible to substantiate them all. They do not frequent houses here as they do in neighbouring parts where apart from their odour they may do some good in eating noxious insects such as cockroaches.

Chimarrogale himalaica phaeura Thos.

WATER SHREW. Apparently only found on Kinabalu and a rather smaller form of the Himalayan Water Shrew.

Crocidura baluensis Thos.

PYGMY SHREWS. So far peculiar to Kinabalu and like the common *C. fuliginosa* but larger.

Crocidura fuliginosa Blyth.

This is much the commonest lowland Shrew.

Crocidura doriae Peters.

Crocidura foetida Peters.

Crocidura monticola Thos.

Said to have been taken by Everett in Sarawak: indistinguishable from the Javan form.

Crocidura hosei Thos.

A very small short tailed Pygmy Shrew from the Baram lowlands.

Pachyura krooni Kohlb.

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ORDER IX. CHIROPTERA.

BATS.

At one time the Bats and the Insectivores were lumped together but they are now widely separated and any characters they have in common, such as the similarly shaped teeth, are due to similar habits. One approaches this Order with a certain amount of diffidence for there is nowhere a really complete collection of Malayan Bats and so very many species have been described on minute differences that identification is not easy even for an expert.

Roughly there are two kinds of Bats, Insect and Fruit Eaters, the former more numerous in species. Insect eating Bats are small, have many fine pointed little teeth and as they have to exercise considerable discretion in procuring their food in the twilight they are provided with what are regarded as special perceptive organs—either a nose-leaf of some sort or a tragus—the exact use of which whether in avoiding obstacles or catching their prey is so far unknown. Such organs are quite unknown in the Fruit-Eating Bats such as the Flying Fox.

Bats vary very much in shape. Some have a plain tail, some have it enclosed in a membrane stretching between the hind-limbs and some have it in a kind of sheath partly free and partly inserted in this interfemoral membrane. The interfemoral membrane in some is said to be used to entrap insects during flight and to hold them against the body until they are eaten, the wings being also used in this way.

Every Bornean cave has swarms of bats, the droppings of the fruit-eaters in particular being sometimes collected as good for the garden. Usually there is a great chorus of squeaking going on inside the caves—some Bats squeak in such a high pitch as to be inaudible to the human ear—and a very musky smell in spite of which the natives do not disdain “Bat Pie.” Some caves are occupied exclusively by one species, others have one kind in abundance and but a few other kinds present; quite possibly there is some sort of zonal distribution within the caves various species selecting their sites near or far from the entrance according to taste.

I am unable to give descriptions of the Bats I have not seen and there are comparatively few whose habits have been observed.

SUB-ORDER MICROCHIROPTERA.

As mentioned all these Bats are Carnivorous or Insectivorous. There is always a frill round the nose or else a Tragus or sometimes both, most important characters in sorting out the Families.

Family EMBALLONURIDAE.

Like the next Family (Vespertilionidae) the bats of this Family have a Tragus but no Nose Leaf but the tail is free or in a sheath outside the interfemoral membrane and not contained within the membrane.

Bats of the Genus *Emballonura* are very small, not exceeding two or three inches in length. As in *Taphozous* the tail is partly

contained in a curious sheath; after following the interfemoral membrane for some time it diverges into a pocket on the upper surface of this membrane within which pocket it is partially retractile.

Nyctinomus plicatus Buch.

This curious Bat is like *Taphozous* in size, in the long wings and big ears but is remarkable in that the latter almost unite across the forehead.

I believe it is this species which has been so well described from the "birds'-nest" caves of N. Borneo; they are described as wheeling round before coming out about sunset, flights breaking off now and then to emerge, something like twenty flocks each of many thousands moving off before dusk. At sundown a number of Hawks collected for the fun, two Brahminy Kites (*Haliastur intermedius*) being clumsy compared with a particularly agile Buzzard (*Maccaeramphus alcinus*) which caught and ate its prey on the wing. The affair was reversed at sunrise, Bats coming at great speed for over two hours and dropping straight into their caves.

Cheiromeles torquatus Horsf.

THE HAIRLESS BAT. There is no mistaking this revolting looking Bat, some six inches or more in length and quite naked, only a few scattered bristles representing the furry covering of other species; I have never myself seen the beast alive and must rely on Shelford's clear description of its peculiarities.

It appears that the membranes of the wings are attached in such a way to the sides of the body, arms and thighs as to form a large pouch extending from under the armpits to the back of the shoulders and sides of the chest; the young are carried in these pouches, present in both sexes, the teats of the female being situated under the armpits. More remarkable still is a strange Earwig which has taken up its abode in these brood pouches of the Bats but it is quite unknown how they fare for food though it is suspected they leave their host at times in search of living insects.

In addition to the brood pouches both sexes of this Bat have a pouch opening on the underside of the neck, into which pouch certain glands secrete a fluid with a most offensive odour, compared by Hose to the smell of burning leather. This Bat is said to form small colonies in hollow trees and not to use the caves frequented by most other Bats.

THE TAPHOZOUS BATS are distinguished by their greater size (exceeding three inches) from the rest of the Family.

Taphozous longimanus albipinnis Thos.

As far as I have observed these Bats are solitary as a rule and I have most often seen them fly out of the crown of a coconut Palm as someone ascended the tree; the white wings are particularly noticeable in flight and give the beast an unmistakable piebald appearance.

Taphozous saccolaemus Temm.

Differs in having a large pouch under its chin.

Taphozous melanopogon.**Taphozous affinis** Thos.**Emballonura monticola** Temm.

A very small and fluffy dark brown bat with black wings, the whole very like *Vespertilio muricola* but at once distinguished by the sheath tail; it is found in caves and under overhanging ledges of rock, being a fairly common species.

Emballonura semicaudata Peale.

This is said to be a larger species than *monticola* found in Polynesia, the Fiji Islands and Mergui Archipelago.

Emballonura rivalis.

Family VESPERTILIONIDAE (TRAGUS-EARED BATS).

Like the Fam. Emballonuridae just described these Bats have a tragus but no nose-leaf and differ in having the tail enclosed within the interfemoral membrane instead of in a loose sheath of its own.

Kervioula pusilla Thos.**Kervioula whiteheadi** Thos.**Kervioula papillosa** Temm.**Kervioula hardwickei** Horsf.**Kervioula bombifrons** Lyon.

Bats of this genus have a comparatively long tail, as long or longer than head and body, than which it is definitely shorter in other Vespertilionids.

Myotis adversus Horsf.**Harpyiocephalus suillus** Temm.

THE TUBE-NOSE BAT distinguished by the very rounded, pipe like slightly elongated external nostrils.

Hesperoptenus doriae Peters.

I believe this is the Eastern form of the EUROPEAN PIPISTRELLE BAT.

Pipistrellus tenuis Temm.**Pipistrellus imbricatus** Horsf.**Glischropus tylopus** Dobson.**Pterygistes stenopterus** Dobson.**Tylonycteris pachypus** Temm.

A peculiar CLUB-FOOTED BAT with strange sucking pads on its hands and feet.

Pachyotis kuhli Leach.

This small Bat some 3 ins. long is unfortunately not so common here as in Java and India where it has a praiseworthy predilection for White Ants. It is distinguished from the above mentioned Bats in having only one instead of two pairs of upper incisors.

Family NYCTERIDAE.

Notable for the possession of a nose-leaf as well as a tragus.

Nycteris javanica.**Nycteris tragata.**

Megaderma spasma L.

This curious species is sometimes erroneously called the VAMPIRE BAT and has been recorded sucking the blood of smaller Bats and even I believe of Frogs: true Vampire Bats attacking Man and his domestic animals are natives of S. America. *Megaderma spasma* is of medium size, has a simple nose-leaf, large ears whose inner margins are united at the base and further lacks a tail.

Family RHINOLOPHIDAE (NOSE-LEAF BATS).

These Bats are remarkable for the great specialization of the Nose-Leaf but corresponding absence of the tragus; they include the "Horse-Shoe" Bats of Europe, are very numerous in species and perhaps represent the most highly specialized of Bats.

Hipposiderus dayacorum Thos.; **coxi** Shelford; **sabanus** Thos.; **speoris** Schneid.; **bicolor** Temm.; **doriae** Peters; **cervinus** Gould; **galeritus** Cantor; **larvatus** Horsf.; **insolens** Lyon; **Hipposiderus diadema vicarius** K. Anderson.

A very common Bat in the Birds Nest Caves near Lawas; the male is very dark brown above, fine grey, almost white below, the female much more ochraceous above and below. Of a dozen collected at random only one was a male.

Rhinolophus minor Horsf.; **creaghii** Thos.; **affinis** Horsf.; **borneensis** Thos.

Rhinolophus luctus Temm.

Rhinolophus trifolius Temm.

This is a very fluffy light grey Bat, the commonest species of the genus, occurring solitary or in pairs hanging some 6 feet or so above the ground on some twig in either old or secondary jungle and not frequenting caves or even hollow trees.

SUB-ORDER MEGACHIROPTERA.

These are the Fruit-Eating Bats, comparatively few in species but almost incredibly numerous in numbers. All Bats of this Sub-Order lack a Nose-Leaf and the Tragus.

Everyone knows the Flying Foxes to which Sub-Family belong a number of smaller species of which the two following are typical and very common representatives.

THE FRUIT-BATS.

Cynopterus (Penthetor) lucasi Dobson.

A small Bat some five inches long, sparsely clad in short coarse fur very different from the hairy or woolly appearance of the Insectivorous Bats. The general colour on head and back is dark brown with a greyish collar round the neck, the wings very dark brown but the underside dark grey in the female, light grey in the male.

Cynopterus brachyotis brachyotis Muller.

The common lesser Fruit Bat is very like *C. lucasi* but of a more greenish brown above having a distinct buffish (not whitish or grey) collar round the neck.

A most common and voracious little Bat recorded as eating more than its own weight of bananas in a night. There is on Pulau Salak near Santubong at the mouth of the Kuching River a large crevice
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in the rock and a hole in the ground (now filling in) occupied by enormous numbers of this bat.

Cynopterus spadiceus Thos.

Cynopterus maculatus Thos.

are two Bats of which I know nothing.

Cynopterus ecaudatus Temm.

This Bat appears to have been taken on Mt. Kinabalu and is found in Sumatra and the Malay Peninsula.

Eonycteris spelea Dobson.

Carponycteris minima Geoff.

These two Bats belong to a different sub-family and are notable for their very long tongues capable of protrusion for half an inch or more. Both have square blunt almost Dog-like muzzles and the former is remarkable in that it has no claw on the second index finger.

Pteropus edulis Geoff. (Plate XVIII).

FLYING FOX; Malay: *Kaluang*; Tagal: *Kawat*; Murut: *Bangkaut*; Dusun: *Paniki*; Kayan: *Hawat*.

These huge bats have a wing spread of about four feet; the crown dark but the nape and neck yellowish buff, more rufous on the sides, the back black and the underside a very dark brown. The eyes and ears are large, the whole appearance menacing and repulsive; there are two enormous claws on the "thumbs" of the wings and the hind feet are provided with five curved claws but there is no tail.

During the fruit and flowering season from October to February these may be seen almost anywhere about dusk, sometimes during the day and solitary individuals may be seen at other times of the year. the flock no doubt splitting up and scattering when the fruit is off. Colonies of thousands roost together and all at dusk flight towards various fruit trees, notably "*Kayu ara*," for the evening meal; those already there set up an awful squealing to the late comer who flies up to the projecting tip of a branch, checks its flight. hooks itself on with the long curved claws of its hind feet and hangs head down for a moment. Then it reaches up and with the aid of the long curved claws on its thumbs proceeds to walk back downwards along the underside of the branch until it reaches fruit fit for food. The flight is straight and deliberate, the wing beats slow and deceptive as regards pace which is considerable; the weather effects them little though I think rain and high wind make them fly low, nevertheless some mounting as high up in the air as they often do in fine weather and maintaining their way in very strong winds and rain. a sufficient tribute to their wing power. The heavier species of the various orders of birds have a relatively smaller wing area than lighter species of those orders. The male "*Kaluang*" being as a rule slightly heavier than the female has about the same relative wing area as his mate, a fact which can only be accounted for by the female having at times the additional weight of the offspring clinging to her which makes her for a time scale as much as the male. The

clinging young are found at any time from December to about March, as a rule just the time when their parents join in huge flocks; half grown ones may also be flying in October.

In the flesh it is a repulsive animal but its meat is said to be good eating in spite of its musky smell. Though it has no real fleas the sight of the numerous apparently bloated wingless flies running about in its fur is unpleasant. The teeth are very powerful and can give a nasty bite. Its method of feeding is to hook its food towards itself with one of its thumb claws on the outstretched wing, surplus food being stored in its cheek pouches. When hanging from a branch its hind feet are always apposed, gripping opposite and not the same sides of its perch: to defecate (a very frequent happening) when hanging head down it hooks the claw on one thumb over its perch raises itself up until the operation is over thus avoiding soiling itself.

Whitehead describes thousands resting on the hanging ends of the Nipa Palms, seeming to court the full glare of the sun and gently fluttering one wing as if fanning themselves; they took off with a rattling noise of their wings and had their mouths open when flying as if they were panting in the heat.

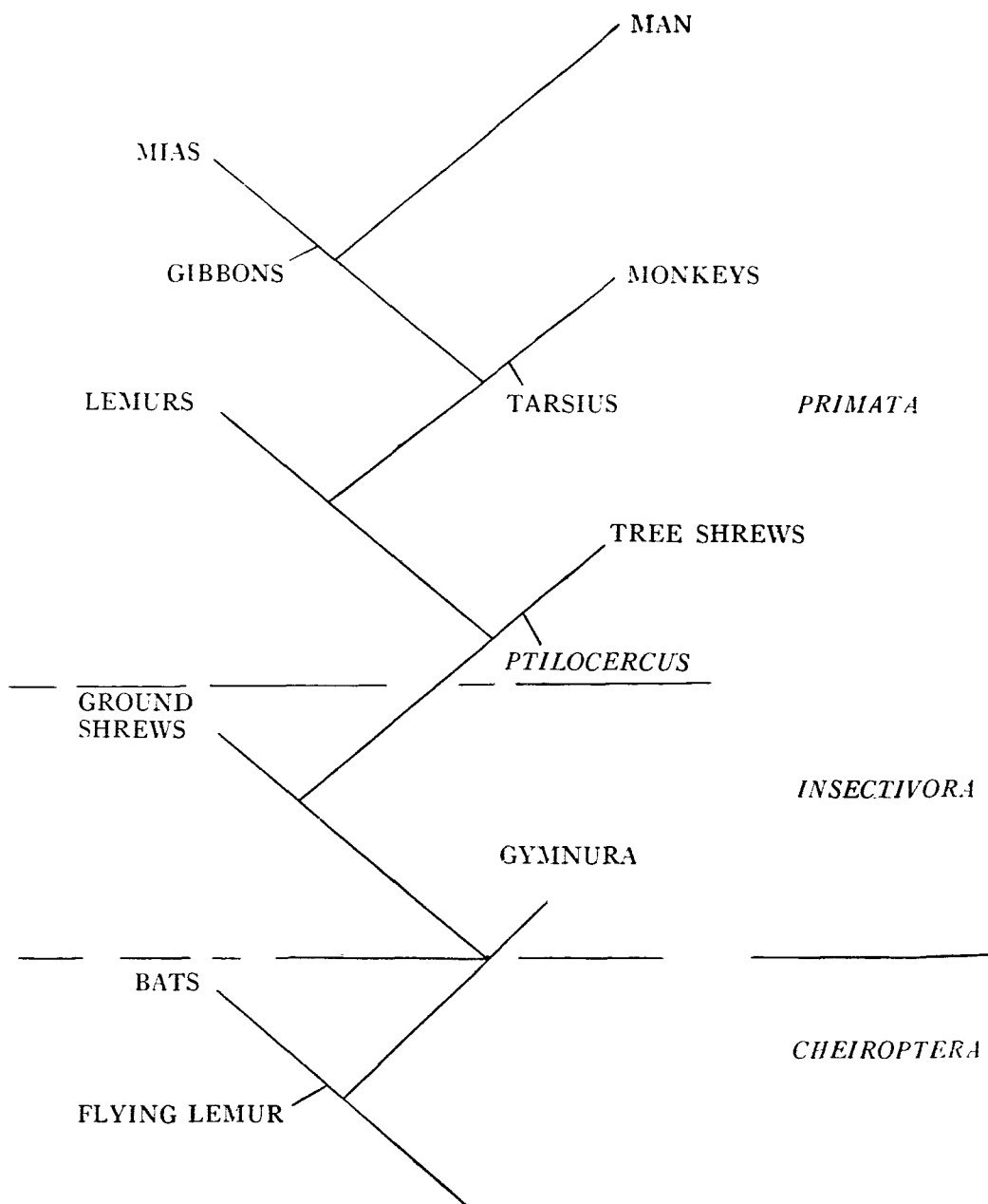
They do considerable damage when roosting in the Nipah Palms for several may hook themselves onto each frond which may ultimately die or in time give way, leaving the bare spikes of the Nipah without a single leaf for several feet from its tip and the leaves lower down broken, bent and dying.

ORDER X PRIMATA.

Man, Apes, Monkeys, Tarsius, Lemurs and Tree Shrews.

The Primates are divided by many investigators into the Anthropeidea (Man and Apes), the Pithecoidea (Monkeys, these last sometimes including Tarsius and sometimes leaving him between themselves and the next, as the Tarsioidea) the Lemuroidea (Lemurs) and possibly the Tupaiidae (Tree Shrews), which recent research strongly suggest should be included in this Order.

One cannot build an entire evolutionary tree out of the strange inhabitants of Borneo but their place in such a tree would be somewhat as follows: Nearest to Man the Apes, of which the Mias comes first in Borneo preceded some way off by the Gibbons; then the Long Nose Monkey, the Lotongs and the Macaques (Kras and Broks); close to them in a little section to himself, Tarsius, looked on by some as being nearer than the Apes to the point of Man's origin; further away the Lemurs, represented here by the Loris. Then a fairly big gap to the Tree Shrews with the Pen Tailed species perhaps in a little section to himself slightly nearer the still distant Order Insectivora; follows this Order, the true Ground Shrews and the *Gymnura*, whilst further off the Order Cheiroptera or Bats, and the most archaic of all, the Flying Lemur. Not for one moment does one suppose that the forms mentioned are in the direct line of evolution, being of course but offshoots of it represented graphically somewhat as follows:



SUB-ORDER TUPAIIDAE.

TREE SHREWS.

Great interest has been taken in the so-called Tree Shrews or Tupaiidae and an intensive study of their anatomy, notably by Dr. W. E. Le Gros Clark, has thrown much light on their position in the Animal Kingdom. They are really only very distantly related to the Shrews they outwardly resemble and they have not as many affinities with the other Insectivora as was thought, for a study of the skull, the brain and their general anatomy suggest they should be included in the Primate Phylum with Man, the Apes, the Monkeys and the Lemurs whom they parallel in osteology, myology, vascular and genital systems. They have many primitive and many Primate features, some possibly due to adaptation to their habits and they may be regarded either as the most primitive of Primates, the nearest living representative to the ancestral form from which was derived the Primate stem, or perhaps better still as a representative of a generalized group of Insectivorous mammals which are an offshoot from the stem of the Primate Phylum after the latter had differentiated from other Phyla: all of which means that the Tupaiidae are not Insectivores as formerly thought, but are primitive Primates.

Tree Shrews and Squirrels are much about the same size and when just seen passing in the jungle not unlike to look at; "Tree" Shrew is an unfortunate name for though they can and do run about in the trees most species spend the greater part of their time on the ground running over and under fallen tree trunks. In this connection it is notable that in three cases to be mentioned later where there is a similarity in colour pattern between Tree Shrew and Squirrel it has usually been the ground Squirrels (*Funambulus*) which have been unconsciously chosen as models.

Tree Shrews are all small and bear a superficial resemblance to Squirrels from whom they may at once be distinguished by the pointed snout and the numerous, sharp pointed little teeth quite different from the enormous pair of incisors or "Rabbit" teeth carried by the Rodents.

The superficial resemblance is carried even further, in fact it is even possible that certain Squirrels are mimicked by certain Tree Shrews or vice versa; Squirrels can be insectivorous and Tree Shrews frugivorous but if any advantage is gained it probably goes to the latter. *Tupaia minor* and *Sciurus tenuis* form one pair, *T. montana* and *Funambulus everetti*, both confined to certain mountain tops, are another couple, *T. dorsalis* and *F. insignis* a third, somewhat similar in appearance and habits. Of actual mimicry we have no proof but the specimens laid side by side are certainly suggestive. Squirrels and Tree Shrews often fight in captivity and as I have said the latter name is certainly a misnomer. for trees are probably less frequented by *Tupaia* than the ground, in two cases the habitat of the Squirrels supposed to be mimicked.

A short key is given here to the forms that may be met:

- A Tail naked except for terminal tuft *Ptilocercus*
- B Tail hairy
 - b Size large (Fifteen inches length)
 - b¹ Black dorsal stripe
 - b² Underside red *Tupaia tana*
 - b³ Underside yellowish *Tupaia picta*
 - b⁴ No dorsal stripe,
 colour uniform *Tupaia glis*
 - c Size medium; colour uniform *Tupaia montana*
 - d Size small (Length one foot)
 - d¹ Black dorsal stripe *Tupaia dorsalis*
 - d² No dorsal stripe, colour
 uniform *T. minor & gracilis*

***Ptilocercus lowii lowii* Gray. (Plate XV).**

THE PEN-TAILED SHREW.

This curious looking little animal has also been the subject of a great deal of controversy, in certain aspects being even more Lemuroid than *Tupaia* but in other ways much more primitive.* The latest account would seem to emphasise its primitiveness and perhaps ascribe its Lemuroid features to its nocturnal adaptations, as opposed to the more Primate-like features of the diurnal *Tupaia*. *Ptilocercus* is a generalized and primitive arboreal animal and represents a slightly earlier stage than *Tupaia* in the evolutionary development of a Lemuroid from a primitive insectivorous animal: compared with *Tupaia* it has a more primitive brain, smaller elaboration of the neopallium and is much less Lemurine in skeleton, musculature, genital system and other anatomical features. *Ptilocercus* has the visual regions of the brain less developed than in *Tupaia*, the auditory centres and peripheral sense organs better developed, the olfactory regions being little reduced; *Tupaia* on the other hand is most sensitive to visual stimuli and has suffered a corresponding reduction in the olfactory apparatus of the brain.

Actually it is a little animal not much bigger than a small rat, covered in greyish mouse coloured fur, the tail naked except for the terminal inch or so which bears a whitish plume, sometimes with a few black hairs proximally. The nose is pointed, the eyes and ears rather prominent and the feet rather noticeable for the wide expansion of the digits.

Some that I had in captivity used to spend most of the day asleep and only come out in the evening to eat up a few cockroaches

* The late Mr. Oldfield Thomas considers the many cusped tooth, such as in this animal, to be the primitive original form of tooth and the simple tooth to be much specialized; he would therefore not consider *Ptilocercus* to be more primitive than *Tupaia*.



The Pen-tailed Tree Shrew (*Ptilocercus lowii*).



The Tree Shrew (*Tupaia tana utana*).

and small bananas; when asleep the tail was curled round till the "feather" covered the face, I imagine to ward off mosquitoes and flies. They were expert climbers, up and down the surface of a door and apparently only using their tail as a support when at rest; on the ground they proceed in a series of hops, the tip of the tail inclined upwards and the digits being so bent that the claws touched the ground sufficiently to interfere with them walking normally on their palms.

A fuller account of its habits may be found in the latest contribution to the subject.

Dendrogale melanura Thos.

TREE SHREW. This a small rather rufous Tree Shrew, buffish below, lacking the shoulder spot and possessing a normal cylindrical tail neither fluffy nor feathery as in so many *Tupaia*; this last character together with the large claws are responsible for the separate genus.

The animal is rather variable and is said to be common on Mt. Kinabalu, occurring also on Mts. Dulit and Murud but nowhere below 3000 ft.

Dendrogale murina Mull. and Schleg.

TREE SHREW. A single specimen, much smaller than the above, came from Pontianak and is in the Leiden Museum.

Tupaia montana montana Thos.

TREE SHREW. Somewhat resembles *T. glis saltana* in being unicolorous but rather darker; it lacks the long snout, hands and feet and has quite a short tail. A shoulder spot is faintly indicated. The general colour varies according to the angle from which the specimen is viewed but it is usually rather dark with a number of coarse black hairs which in many cases but not all form a dorsal black patch or stripe; the black markings are always absent in the allied form, which has further minor differences.

Little is known of its habits beyond that it is mainly terrestrial, inhabits Mts. Penrissen, Poi and Dulit above 3000 ft. and does not occur in the lowlands.

Tupaia montana baluensis Lyon.

TREE SHREW. Dusun: *Tcmburoih*.

The distinctiveness of this sub-species is not very clear, but depends on minor details except for the invariable absence of the dorsal marking sometimes present in the other.

It is found on Mt. Kinabalu and doubtfully on Mt. Murud, at an altitude of over 3000 ft.

Robinson and Kloss were to have named this *T. m. moultoni* but Lyon preceded them with his description by about a month.

T. montana bears a remarkable resemblance to *Funambulus everetti*, a Squirrel likewise found only on mountain tops above 3000 ft. and not on the lowlands; both the Shrew and the Squirrel are almost entirely terrestrial, running about on and under tree trunks lying on the ground, the similarity in appearance and habits

suggesting some kind of mimicry not yet worked out. The Squirrel is perhaps a little the commoner of the two and possibly has a lowland form in *F. laticaudatus*, whereas the *Tupaia montana* has no lowland representative.

***Tupaia picta* Thos.**

TREE SHREW. This species somewhat resembles *Tupaia tana* but is not rufous being inclined more to black and buffish; in fact the underside is ochraceous instead of rufous. The size is about the same, the snout is short and a black dorsal stripe is present except in one whose back is all black; the sides and flanks usually have a number of buffish hairs and the terminal half of the tail is rufous. The shoulder spot is present but unlike *tana* the area between it and the black of the dorsal stripe is concolorous with the rest of the body and not split into a lighter and darker patch; the shoulder spot in fact is not bordered by black or ferruginous along its inner margin.

Very little seems to be known of its habits but it appears to inhabit the Baram area in N. Sarawak and is absent from the rest of the State.

***Tupaia splendidula lucida* Thos. and Hart.**

TREE SHREW. Somewhat resembles *ferruginea* but has a dark red brown tail something like *tana* than which it is a good deal smaller.

***Tupaia dorsalis*.**

TREE SHREW. This species is rather bigger than *T. minor* but has a narrow black dorsal stripe from nape to root of tail. There is a buffish shoulder stripe, the forequarters are fawn coloured, the hind quarters and tail rather rufous; the underside is buffish yellow.

It appears to be a terrestrial species found in most parts of Sarawak, usually on the lower slopes of hills but not noticeably above 3000 ft.

Like *Tupaia tana* and *T. picta* the dorsal stripe suggests an imitation of the colour pattern in the Squirrel *Funambulus insignis*; from observation perhaps *T. dorsalis* is the most likely mimic but possibly only in a very general way. Like the squirrel and *T. tana*, this species is largely terrestrial.

***Tupaia gracilis gracilis* Thos.**

TREE SHREW. Very like *T. minor* but not so rufous and perhaps rather larger; the shoulder patch in the present species is grey and not at all outstanding.

Like *T. minor* it is generally distributed over Sarawak, the two being taken in the same area.

***Tupaia minor minor* Gunther.**

TREE SHREW. Dusun: *Tigi*.

This is one of the smallest of Tree Shrews less than a foot in length but quite one of the commonest, often seen running on the ground, on fallen tree trunks and even in trees. It is uniformly

coloured something like a Rabbit but sometimes more rufous, with a white marking on the shoulder and a greyish white underside. The snout is short and blunt for a Shrew and the tail is not so feathery as in other species.

I have twice had a pair of young of this species, both taken from hollow trees, in one case during September. The young made a little cheeping noise and thrived on milk (which used to get up their noses and lead to snorting matches) and bananas; they were particularly active at night and often used to find a way out of their cages though they didn't stray far. On the ground movement consisted sometimes of a series of hops when in a hurry but normally they walked in the ordinary way.

The cry of the old one is a rather piercing squeak often to be heard about dusk. They are found all over Sarawak up to a fair height on mountains.

T. minor and *T. gracilis* somewhat resemble *Sciurus tenuis* in appearance, especially if only just glimpsed in the jungle but they are on the whole less arboreal than their Rodent model.

Tupaia tana utara Lyon. (Plate XV).

TREE SHREW. This is one of the largest Tupaia's and is almost wholly terrestrial. The head is fawn coloured, there are two buffy or greyish white whorls on the side of the neck meeting in the mid line a characteristic median black marking running about half way down the back; there is a large light patch on the shoulders subdivided on each side by a short black lateral line which at once distinguishes it from *T. picta* which has only the median dorsal line and a minute light shoulder streak corresponding to only the more remote part of the larger patch in *T. tana*. The flanks are dark chestnut the underside light chestnut, the lower back almost black, covered with coarse bristly hairs, the tail above and below usually bright chestnut but sometimes darker. Specimens from Mt. Dulit do not differ though immature specimens are often very bright.

In a wild state they are most often seen running on the ground, head and tail up, on occasions probably when near their nest showing no fear of man but scurrying round a yard or so away and uttering low chirps. In captivity they are mostly frugivorous but do not touch anything hard such as sugar cane; pisangs and tomatoes, also sundry small ants sharing the pisangs, were intentionally licked up off the floor, bits of fruit being prised off and squashed to a pulp or strained before eating rather recalling the use of the depressed comb-like lower incisor teeth of *Galeopterus*. Though terrestrial they climbed well, were thoroughly at home on horizontal branches and slept at night in the top of their cage. They quarrelled somewhat among themselves and were generally routed by either *Sc. przewalskii* or *Sc. notatus*, their alarm note being a harsh cackle rather like that of a Jay at home. At rest the tail was curled round under the chin, when walking the tip bent straight up, back arched

and head raised. The thumb has a claw instead of a nail as in Squirrels and the walk is normal not splay footed as in the latter; the tail is of the bushy "flue brush" variety, though in skins it appears feathery and flattened. When taken at the end of November the parts of the male were conspicuous and he frequently, often unsuccessfully, tried to cover his mate who was already pregnant. When curious and sometimes when eating they sat bolt upright on their hindquarters, the back almost vertical not bent as in Squirrels; when sitting up to feed this *Tupaia* definitely sat upon its sit-upon whereas *Sciurus prevostii* does not but squats resting the back of its thighs against the back of its legs as in the illustration.

A very beautiful variety *chrysouza* was taken by Everett in N Borneo and described by Gunther; it is duller, darker, less chestnut but in moulting has a number of soft grey hairs on its lower back. The tail is bright golden yellow and Everett in his notes says it is confined to Bukit Lumbidan in the Padas Delta and is the only form found there.

Lyon (1913) described several other forms: *paitana* from N. E. Borneo and the Bulungan River differing in having the shoulder stripe bordered by the light colour of the back and not the reddish colour of the flanks; *besara* from the Kapuas River distinguished by its smaller size.

***Tupaia glis salatana (longipes)* Lyon.**

TREE SHREW. One of the largest of Tree Shrews, it is about 18 inches long but uniformly drab coloured above except for a whitish or almost rufous mark on each shoulder; the actual fore and hind feet, the carpus and tarsus appear to be extra long in this species, as is also the snout.

In habits it does not appear to differ from others of the genus, being found equally on the ground and on tree trunks; it is not as common as *Tupaia tana* but is distributed throughout Sarawak.

SUB-ORDER LEMUROIDEA.

(Lemurs).

All the true Lemurs live in Madagascar but they have a number of allies on the African mainland some of which reach the Oriental Region and are represented in Borneo by the Loris: there is a near relative in India and Ceylon and these two with the Potto of W. Africa form a group to themselves differing a good deal from other Lemurs.

Lemurs on the whole are low in the Primate scale of organization but have every right to be considered Primates in respect of their brain and in some other characters; certain fossils are however doubtfully placed among Lemuroidea and Insectivora.

***Nycticebus tardigradus borneanus* Lyon. (Plate XVI).**

Malay: *Oukang*; Dusun: *Tandaiundong*; Sennah: *Sesir*.

The appearance of this little animal is rather well known, a rounded, tailless ball of fur with a blunt, square head and short



The Slow Loris (*Nycticebus tardigradus borneanus*).

legs. The colour is very variable owing to there being two different kinds of fur, there being a dense, short, wooly under-fur everywhere but on the head and limbs and a longer, sparser, usually brownish set of hairs; these hairs are sometimes quite whitish giving the animal a "frosted" appearance most common in the young but present in some adults independent of age, sex or season and there is every gradation. There is a broad white stripe down the forehead onto the nose, a large brown patch enclosing each eye, a white patch in front of each ear and then two brown markings meeting on the crown to form a single dorsal stripe which may reach onto the shoulders.

The hands are most efficient, fingers provided with rounded nails and the thumb capable of wide expansion; one toe on the hind foot supports a claw. Both the feet and the leg-joints constitute a mechanism by which the Loris performs strange acrobatic feats and really assumes almost impossible contortions as it moves about.

This little animal is often brought in alive but owing to its sulky and retiring disposition is not very exciting to keep. The young ones can be tamed but as they are nocturnal not very much is seen of them, though they often return from their wanderings after an absence of several days. A single young one is born and clings tightly to its mother occasionally giving a loud squeak whilst its parent utters a low rumbling growl which cannot be heard at some distance. It is very hunched up in shape with its head hidden between its legs, the unhappy animal according to the Malays hiding its face because it is always seeing "antus" or ghosts; when really awake its activity is considerable and I have seen it catching butterflies and cockroaches in its cage with great skill. It lives mainly on bananas but will eat almost anything else, being capable of giving a comparatively very sharp bite for so small an animal. The bite is definitely not poisonous as sometimes stated.

There are legions of amusing stories about the Loris, mostly unprintable; in Assam he is supposed to have attended a great feast at night and so much did everyone enjoy themselves that the Sun was asked to stay down a little longer when morning was due; but he couldn't resist having a peep, disclosing the Loris, then nimble and sprightly, doing a "pas de seul," whereupon the Loris was furious with the Sun who only replied that he should neither dance nor see the Sun again, which accounts for his ungainliness and love of darkness.

Bock states that the Loris is covered beneath its skin by a layer of nauseous-smelling fat which renders it unpalatable; it is true that the stomach cavity of one specimen was richly loaded with fat and that a "Tenggalong" (*Viverra zibellina*) refused to eat much of it but other normal specimens were consumed in the ordinary way, save for their heads, the very part usually first eaten in other animals.

SUB-ORDER TARSIOIDEA.

(Tarsier).

Tarsius is the only living representative of this Sub-order and has come in for more scrutiny than most animals; originally put among the Lemurs, he has at times been transferred to the Monkeys, with whom he has apparently more affinity and has been cited as being more nearly like the ancestors of Man than the Apes and Monkeys, usually credited with the nearest resemblance to that mythical being.

It is perhaps fairly clear that he is no longer a Lemur and has a great many characters common to Monkeys; the claim to a prominent place in Man's ancestry rests on the labours of anatomists and on certain Tarsioid fossils but there still remains a vast amount of evidence provided by Monkeys, Apes and by fossil human skulls as to Man's Simian ancestry.

Tarsius spectrum borneanus ELLIOT. (Plate XVIII).

THE TARSIER; Iban: *Ingket*; Kadayan: *Senŋal'li*; Senrah: *Lakud*; Dusun: *Tindok rokok*.

Few animals have excited more comment in their appearance or stir in the scientific world than the Tarsier, which has now come to be popularly regarded as a sort of missing link between the Lemurs and the Monkeys and though rather nearer the latter, has appealed to evolutionists as being a relative perhaps of the common ancestry of Man, The Apes and the Monkeys. Prof. Wood-Jones has I believe assumed that the Anthropoid Apes, living or extinct, have at no time played a part in Man's ancestry and assumes the many common anatomical features to have been independently acquired; though anatomists will not agree with him thus far, he proceeds to contend that Man's independent origin must be sought for among the small Tarsioid animals of the Eocene Period, a contention which however improbable redoubles the interest in Tarsius as a survival of those animals just possibly long ago responsible for Man's development. The little beast has been and still is being studied intensely and whilst it would not be seemly here to repeat some of the things written about him some general account is included because of his notoriety.

He is only a little buff coloured animal about 15 ins. long with a comparatively big round head in which are set two enormous brownish eyes; the thin fingers and toes are very elongated, their tips widening out into small adhesive rounded suckers, the nail still remaining but being prominent on two toes only. The tail is about as long as the body but except in the young is quite hairless on the underside and almost so on the upper side save for the last two inches; it is in no way prehensile but the underside is applied to the upright stick to which he most often clings and thus helps to keep him in position. The fur is soft and woolly often leaving a bare or sparsely covered area all down the inside of the

The Flying Fox
(*Pteropus edulis*).



The Tarsier
(*Tarsius spectrum borneans*).

limbs and under the throat. The ears are rounded and fairly prominent but the nose resembles those of Monkeys rather than Lemurs; in the latter the nose overhangs the lower jaw, and the upper lip is adherent so that drinking is done by lapping, whereas the Tarsier has a free, uncleft upper lip probably capable of partial protrusion as in monkeys. Some authors would divide the Primates into two groups, the Lemurs by themselves in one and Man, Apes, Monkeys and the Tarsier in the other but others favour putting the latter in a Sub-order by himself between the other two divisions.

The Tarsier seldom lives long in captivity, about a fortnight if one is lucky though it will eat Cockroaches and Grasshoppers with apparent zest; the Dayaks keep it on rice and bananas, which latter it does occasionally touch and though it may live for a week or so thus it is generally offered for sale when at its last gasp. It is at times most obtuse in taking any notice of its food, though at other times it is quite smart, irrespective of its hunger; sitting upright on its stick it sees a Cockroach meditating on the floor and after staring at the prey for a few moments the Tarsier without further warning takes a flying leap—may be as much as a yard—and lands near its food when the long fingers with the curious pads close on the Black Beetle, for whom there is then no escape. A few nips quieten the Cockroach whilst its captor nibbles round the wings until they drop off, the victims body being held in one or both hands; here it may be remarked that it is characteristic of the Tarsier, the Loris, the Tree Shrews and some Civet Cats that when biting their teeth do not penetrate very far but that there is considerable crushing power, perhaps enough to almost numb ones finger, and no doubt quietening an active insect even more quickly than a sharp piercing bite would do. The Tarsier seems to close its eyes when biting but opens its mouth when threatened as do most animals; it has I believe been recorded picking dead insects out of Pitcher Plants but this requires confirmation.

The Tarsier is fond of drinking and licks up any drops of water sprinkled on its fur. It is of course entirely crepuscular and nocturnal, being most usually found solitary by Dayaks clearing secondary jungle but sometimes in old jungle too, though it does not ascend mountains. They apparently breed as do most Mammals from about October to March and the young are born in a well advanced state, learning to feed and jump about in a months time; Hose recorded the mother carrying its young by the scruff of its neck like a cat with its kitten but this statement has been denied and the young are certainly usually carried clinging to the mothers underside. They have a slight mousy smell but make no noise in captivity beyond the squeak of the young one for its mother; the natives have called attention to its cry about dusk, a croak rather like that of a frog followed by a whirr like the stridulation of grasshopper, or a fishing reel running out, and if this really be their note they must be fairly common. I have twice let specimens go

in the secondary growth at the back of my house and in one case heard this noise for many nights after and the other case for only a few, but have of course been unable to bring it home to the Tarsier, though I have not heard the sound at other times.

As an example of the intermediate position occupied by the Tarsier its mode of vision is of interest: monkeys have stereoscopic vision, each eye gets the same picture but the lower mammals have panoramic vision, each eye receiving a slightly different picture. Certain nerve cells known as the "nucleus of accommodation" are in Primates divided into two, correlated with the independent focussing necessary for stereoscopic vision but are undivided in other mammals where the eyes in the sides of the head register different views: that of the Tarsier is single but broadened out as though trying to divide and if stereoscopic vision is not yet attained there is at least some advance on the mammals lower than the Primates.

Finally there are the blood precipitation tests which proved to be positive for Man, The Orang Utan and Gibbon but negative for Kras and Broks (*Macacus*) the Loris (*Nycticebus*) and for Squirrels and Cats.

SUB-ORDER PITHECOIDEA. (MONKEYS).

Monkeys are clearly divided into two groups, those inhabiting the Old World differing so markedly from the New World Monkeys that their origin has been attributed to two different stocks of ancestors, particularly as no intermediate fossils have been discovered. The tail is never prehensile in Old World forms as it sometimes is in the New World ones and the former have the nostrils close together and pointing downwards as against the widely separated, outwardly directed nostrils of the latter: one has a narrow and the other a broad nose.

The Old World monkeys are again divided into two families, the Macaques (curious word) and the Langurs or Lotongs; the former includes the Gibraltar Ape, the usual "Jacko" like animal of caricatures and barrel-organs, and the "Kra" and "Brok" so common out East, whilst the Lotongs or Leaf Monkeys are slender animals now confined to the Oriental Region but found fossil in France.

Though Man is not "descended from Monkeys" and their common origin is some way off, the human characteristics of these animals are apt to make one uneasy, for so far as I can see it is hard to exactly delimit a monkey's capabilities. Their intelligence and reasoning power, poor though it is in comparison of course, is yet a distinct advance on the limited associations of dogs and cats (who scarcely reason at all) but as with all captive animals stories of their marvellous "intelligence" are seldom to be taken seriously for it is impossible as a rule to know what associations the subject had formed during its captivity prior to the time of any particular

actions; stories of pets however amusing are seldom of real value for one has no record of how much the animal has learnt by association in the past.

Monkeys, like most animals, can communicate with each other about food and enemies, one investigator even going so far as to credit them with a vocabulary which he was able to imitate by his own voice and by gramophone records to the extent of being able to "open a conversation" with stranger captive Monkeys; the "speech" rather differed for different kinds and was limited to only about ten sounds, indicating in a very general way such things as food etc. without specifying any particular kind, an ability hardly superior perhaps to that of other gregarious wild animals such as Deer or Dogs—one can for example tell from the cries of a Dayak's dog whether Wild Ox, Deer, Pig, Barking Deer or Mouse Deer is being hunted.

It may be as well to give a short "key" to the various Bornean Monkeys.

<i>a</i> Tail short	.. ..	" Brok "	Macacus nemestrinus
<i>b</i> Tail long	Colour uniformly tawny	Kra	Macacus irus
	" " red	Jellu merah	Pygathrix rubicundus
	" " black		
	The young white with a black cross on the back	Bijit	Pygathrix chrysomelas
	Colour red and black	Bijit	Pygathrix cruciger
	Colour uniformly grey, no white spot on forehead; young orange coloured	Lotong	Pygathrix cristatus
	Colour uniformly grey with much white hair on forehead	Bangat	Pygathrix hosei
	Colour uniformly grey with little white hair on forehead	Bangat	Pygathrix everetti
	Colour general dark grey with bare white spot on forehead ..	Puan	Pygathrix frontatus

Pygathrix frontatus Mull.

LANGUR. Iban: *Puan*; Kayan: *Perut*.

This monkey has no obvious affinities in colour pattern with other species, its distinguishing feature being that the hair retreats on its forehead leaving a diamond shaped patch of bare milky white skin, from which it derives its name; this patch and the face and nose are sometimes divided by a dark vertical line made by the junction of two inwardly pointing sets of hairs. Elliot has named the Sarawak specimens *nudiirons* and those from East and Central Borneo *frontata*, the former distinguished by a triangular face spot undivided by this vertical line of hairs, and by various colour differences. There is much variation in colour, the vertical hairy frontal line may be present in specimens I have seen from both localities and is independent of age or sex, its shape varying somewhat with general hairiness and the specimen should be seen in the flesh to record the correct shape of its patch—in fact it is impossible to separate specimens from these localities either on the characters given or on any others.

The general colour is a delicate bluish grey, rather lighter below, the limbs black except the actual shoulders and inside of the arms and thighs, which latter are covered with sparse grey hairs. The crest and cheeks are black or very dark brown, the beard white. Half grown young are very similar, rather dark brown where the adult is black and there are a pair of whorls on the forehead as in *P. femoralis*.

The eyes are dark brown, the ears black and as I have said the diamond shaped frontal spot milky white.

The "Puan" is not rare in certain restricted localities but is at all times shy, particularly of cultivation, and appears at one time to have had a much wider range having now withdrawn into the unoccupied head-waters of such rivers as the Mukah, Oya and Bintulu, though formerly and still occasionally occurring in the Saribas area; its headquarters at present are probably the Ulu Batang Lupar, where it is much persecuted for its Bezoar stone. It is most expert in the old jungle but like some others of the genus, on disturbing a troop or even single ones, it comes down to the ground and makes off along the floor of the jungle where to give it its due all trace is lost much sooner than if it had gone crashing off through the trees: Panthers in India are alleged to try to catch members of this genus by emitting a sudden roar in their vicinity in the hope that some of them will fall or take to the ground in their fright. It is a lowland inland species, usually going in troops of 4 or 5, rather fewer than in the other species; the noise is a loud chuckle, shrill as in *P. hosei* and the animal in the flesh has a faint sickly smell like the Long Nose Monkey.

The young are carried about September and the foetus occurs in February; gallstones are occasionally found in this species.

Pygathrix hosei Thos.

LANGUR. Brunei Malay: *Kikok*; Kadayan: *Singaggar*; Dusun: *Minusop* Kayan and Murut: *Bangat*.

The back, limbs and tail of this monkey are grey varying a good deal in depth of colour; the hands are black as are the hind legs from the knee down, except on the inside; the underside appears yellowish white or white—as I shall explain later—and this is continued down the inside of the limbs. The crown is black but the sides of the neck, cheeks, parts of the crest and the very broad forehead are white, turning creamy yellow in some specimens. The young are remarkable in that they have a greyish black crown, dorsal stripe down the back, tail and upperside of limbs, the rest being white recalling in pattern the young of *P. femoralis*.

This is the common monkey of the Baram District though not coming very much further South; it is still very numerous—except in the immediate vicinity of the nomad Punans—and is much persecuted on all sides for the sake of its flesh but more particularly for the stone sometimes to be found in the small intestine. The large oval stones, a shiny green colour and as much as an inch in greatest length, may realise as much as \$30 and \$40 being rather easily friable and ground up by the Chinese for medicine. Specimens from special localities are said to nearly always have such stones, those from other localities seldom or never and the origin of these stones is obscure: salt springs, in which the water is quite bitter, are visited by numbers of this monkey in particular, one place that I saw having the neighbouring small trees worn quite smooth and black by the frequent visits of these monkeys but so far as I know it is impossible to correlate the occurrence of bezoar stones with the presence of such springs. The habits of this species are much as in the others of the genus, the “Bangat” keeping to old jungle either on plains or up to some 3000 ft. on mountains and as far as I have noted never descending to the ground even when alarmed: it makes the usual prodigious leaps and I have observed this kind and *P. cristatus* keep up a side to side movement of the tail during long leaps, thus assisting momentum or direction very much as does the common squirrel (*Sc. notatus*). Some that I saw in the Lawas District were rather noisy, their cries somewhat resembling the loud chuckles of the black “Bijit,” *P. femoralis*; in the Baram they were much less noisy, giving fewer and less noisy chuckles, together with a sort of snoring sound not altogether unlike the noise the Long Nose Monkey makes through its nose.

Pygathrix everetti Thos.

LANGUR. This species resembles *hosei* but is much darker, except on the tail; the general grey colour is darker and so is the black of the limbs whilst there is an indication of a black dorsal stripe. The crown and nape are black but there is only a small yellowish white spot on the forehead instead of the large white area of *hosei*; as in this species the underside varies from white to creamy-white.

The young appear to be of the *hosei-femoralis* type, white with black markings down the head and back and on the upperside of the limbs.

Everetti has a similar distribution to *hosei* being not found much further South than the Baram District; it differs markedly in that it is never found on the lowland plains or in coastal areas but inhabits only the hilly districts and mountains from their foot up to as much as 4 and 5000 feet.

The three species *P. hosei*, *everetti* and *sabanus* merit special attention; the first has a completely white forehead and cheeks, the second black forehead and cheeks, with the exception of a very small white spot on the forehead; the third has a white forehead divided down the middle by a black marking, the cheeks being black. *Hosei* and *everetti* are the two most doubtful species and there is strong if not complete evidence to show that they are really one kind, *everetti* being perhaps but the old female of *hosei*.

Shelford in some unpublished notes first had the idea that all was not well with these two species, pointing out that the head markings in both *hosei* and *everetti* were so variable that it was not unreasonable to consider the latter an extreme melanic variation of the former; Everett must also have seen suspicious for he mentions in his notes that of ten Kinabalu specimens, the eight females were *everetti* and two males *hosei*. Mr. F. N. Chasen also noted the relations of these two supposed species in N. Borneo drawing my attention to the need for investigation and I therefore made a point of collecting these monkeys and comparing the skins already collected.

We have in the Sarawak Museum five adult skins of *everetti*, all fairly typical and female by sex; the frontal spot is always small and in one case almost absent, varying a little in size in other specimens. Of three half grown and five adult typical *hosei* all are male except one and this female was only obtained from the headwaters of the Baram River after four males had been secured. We have however two female specimens of *hosei* in which the white forehead is separated from the white cheeks by a dark marking reaching from ear to face recalling *sabanus* (though of course without the median frontal black marking) and suggesting an intermediate between *hosei* and *everetti*.

I have only seen one *everetti* alive, when a single individual left its troupe and descending to a low level in the trees actually offered defiance to our party; not only did it prove to be a very large female (weighing 14 lbs. against the 10 lbs. and 11 lbs. of ♂ *hosei*) but a typical white-fronted immature ♂ *hosei* was shot from the same flock to which this *everetti* belonged. The cry appeared to be much the same in both species as are the colours of the soft parts: the edges of the eyes, nose and lips yellowish white and the rest of the face a very dark chocolate brown, almost dull blackish.

Nearly all *hosei* are male, all *everetti* are female; *hosei* lives on lowlands and mountains, *everetti* only on mountains, mixed flocks being recorded where their distribution overlaps. *Everetti* (judging from a single specimen) is larger than *hosei* and whilst typical female *hosei* do occur, two intermediates between the two are female and it all rather suggests that *everetti* is the old female of *hosei*. What old *hosei* do down on the plains where *everetti* is absent is so far uncertain but it appears that the female of this species is dimorphic.

One further point: Shelford (unpublished) points out that Thomas' statement that the white markings of *hosei* are replaced by cream in *everetti* is incorrect, for both white and cream marked *hosei* can be seen in Museum specimens, the yellowish suffusion in his opinion being due to drying the skins over a wood fire in the jungle. He very aptly adds "It is perhaps worthy of note that this mistake of Mr. Thomas' has resulted in the production in Mr. Forbes "Monkeys" (Allens Naturalist Library) of a figure of *P. everetti* with absurdly brilliant yellow markings: a good illustration, if not of the Monkey, at least of the fact that published errors share with scandal the privilege of growing in size with advancing age." As far as I recollect both *hosei* and *everetti* have white markings in the flesh and judging by certain specimens subsequently relaxed in a bath of alum, it is these in particular that have the yellowish tinge as opposed to the whitish untreated ones.

Pygathrix cristatus Miller. (Plate XVII).

LANGUR. Malay: *Lotong*.

This is a pretty long haired Monkey clothed in long silvery grey hairs; the hands and feet are often almost black in the adult. The young are peculiar, light orange colour with no sign of a crest and a fine fluffy tail very different from the almost rat-like appendage of a young Macaque Monkey, such as the Kra (*M. irus*); at first the babies are quite unlike their parents in colour but soon go grey at the extremities, the crown, tip of the tail and the hands and feet, passing into a particoloured stage.

It is a common lowland form in Sarawak and so far as I have seen partial to swampy jungle beside rivers and on the sea coast: it is common in the mangrove and Pedada swamps close to Kuching. In captivity it was rather fearful and indolent, not by any means aggressive though capable of giving a fairly severe bite on provocation. It was distinctly active among the trees but did not thrive, being too frightened to eat most things except the shoots and young leaves of the Pedada tree, of which like the Long Nose Monkey it required an immense quantity. Some but not by any means all individuals of this species alone in the Genus had the enormously distended stomach so characteristic of the Long Nose Monkey. I have not heard a wild one make a noise, nor did a captive one get beyond a few Gibbon-like plaintive squeaks, there being no sign of the harsh chuckling alarm note of others of the genus.

Some Lotongs when fired at take to the ground out of fright but this species does not as a rule do so; the captive one I had was however obtained in this way, having inadvertently descended deeply into a mud bank from which he was abstracted by the nearest Dayak.

The head of this species is notable for the pointed crest, the beard and the two outstanding tufts under the ears which give it a rather bonneted appearance. It is unfortunate they will not live for they soon get used to being lead about and lose a certain amount of shyness. The tail is used in this and other species as a support, being at times curled loosely round a branch as a sort of balancing organ.

Elliot described a form *ultima* from 3000 ft. on Mt. Dulit and I am not really clear whether he wished to separate this from other Bornean Lotongs, for which I can see no particular justification.

***Pygathrix cruciger* Thos.**

The colour of this monkey is most variable, no two specimens being quite alike; generally they are rusty red, more yellowish than the chestnut coloured *P. rubicundus*, with a black line variable in extent reaching down the back and tail and continuing onto the upper surface of the forearms to give the impression of a cross. It is possible to show an adult series in which at one extreme are more reddish specimens with incomplete broken up black dorsal markings and at the other extreme are specimens with an extra broad black back leaving only the head, flanks and thighs a rusty reddish. The calf of the leg is reddish but blackens probably with age; there is a dull whitish stripe down the inside of the limbs as in *P. chrysomelas*. The young resemble the adult, rusty reddish with a black cross.

This animal is very local in its distribution, occurring in the Batang Lupar and Saribas area, also in the Pelagus in the Ulu Rejang and near Miri; it is neither a mountain animal nor a plains animal, living chiefly in the foothills and lower slopes of mountains, a region where the black *P. chrysomelas* mainly of the plains overlaps with the red *P. rubicundus* mainly of the mountains. There is considerable evidence that this species is a hybrid of some sort, the particoloured young one, reddish with a black cross, perhaps representing the black cross of the white young of *P. chrysomelas* transplanted onto the red ground colour of the young of *P. rubicundus*. Mixed flocks of *P. cruciger* and *P. chrysomelas* have been recorded and on one occasion a female *P. cruciger* was found carrying a typical young one of *P. chrysomelas* i.e. white with a black cross, but with a few characteristic reddish hairs to indicate ownership.

Actually this species closely resembles the black *P. chrysomelas* having the same coloured face and eyes, the voice being indistinguishable, all characters slightly different in *P. rubicundus*.

This particoloured species nearly always if not invariably takes to the ground on being shot at and thus makes its escape.

***Pygathrix chrysomelas*.**

LANGUR. Lundu Dayak: *Penyatat*; Iban: *Bijit*; Kayan *Pant*.

The upperside of this monkey is entirely black, the hair long, that on the underside shorter and duller. The abdomen is also grey but a narrow yellowish white line runs down the inside of the legs in a stripe though this is variable in width and may be only dirty white in colour. The amount of white varies in all these markings but is always present to some extent; they usually cover the whole of the inside of the thigh but in two cases the whole of the shank inside as well which as a rule has only a faint or no marking at all. We have a peculiar male from Lingga (No. 5.216) in which the bases of the hairs instead of being black or blackish brown are rust coloured on the shoulders, down to the elbows, and on the thighs and flanks so that only the extremities of the hairs are black. If turned aside they disclose rust coloured markings faintly suggestive of *P. cruciger*; the hairs on the rump have only a little rust colour just at the base and there are few of these. The tail is dark brown at the base and more grizzled brownish at the extremity; the crest is very well marked but yellowish white in front with a white patch behind each ear.

The young are very pretty, white with a black line down the back and the upperside of the forearms is also black, the whole suggestive of a cross; when a little older the white turns a delicate French grey and the black extends onto the crest and tail.

This is easily the commonest Leaf Monkey found here, anywhere from old jungle on the mountains at 3000 ft. down to the Pedada and mangrove trees on the shore. It has a noisy staccato chuckle like that of a big squirrel and goes in parties of three to six or more; it will come down on the sea shore in uninhabited parts and sometimes comes down onto the ground when shot at. The young make a querulous mewling rather cat-like noise, sometimes to be heard at night; *P. entellus* the common Indian Langur is recorded as playing with its young, tossing it up in the air and catching it.

***Pygathrix rubicundus ignita* Dollman.**

LANGUR. Iban: *Jellu merah*; Kayan: *Khalassie*; Kadayan and Dusun: *Merogang*.

This monkey is coloured uniformly dark red, rather darker chestnut on the limbs and lighter below. The young vary, some being quite red, lighter below with a light ruff round the neck: another has the limbs, under surface, and part of the tail whitish, the neck and back of the head being quite light. This specimen is probably much faded.

Most of our specimens are from Baram, one from Mt. Dulit 3000 ft. and two from Mt. Murud 6000 ft.: these last are darker chestnut and very much longer haired than the others; in only one

from Malinau in Upper Baram are the feet almost black. The distribution in Sarawak is peculiar for if not a mountain animal it is mostly confined to hills and is absent from the coast and neighbouring lowlands whereas in parts of Dutch Borneo it is said to be the common lowland mangrove swamp monkey. It is doubtfully recorded from Penrissen, does not occur in Western Sarawak, is common in the Kalinkang Mts. and occurs in parts of the Saribas area, such as the Ulu Awik where there is no flat land but a series of broken hills about 1000 ft. high whose tops are still enclosed in jungle forming a retreat for these monkeys.

Three forms have been proposed for Borneo, *rubicundus* with black hands and feet in S. E. Borneo but not Sarawak, *ignitus* from Baram with uniform red hands and feet and *rubida* from S. W. Borneo differing only from *ignitus* in skull characters. The last one should probably be omitted and Elliot would unite the first two on alleged specimens of both from Mt. Mulu but he has not been followed in this.

It varies in disposition, sometimes going in troops and being most noisy, sometimes singly and almost mute; in any case it is one of the most active of the genus and is not always easy to secure, particularly as it is an inland species avoiding human habitation and only occasionally touching the rice crops.

The Kayans call this and others of the genus "khalassie" meaning in their language "a quarrel" and referring to the scolding, rather truculent cry of the animal; the cry of this species is characteristic of the genus, a loud series of resonant chuckles, the first note as in *P. chrysomelas* and the succeeding three or four much sharper and shriller, at once distinguishing the animal.

A female specimen had four holes, one above each collar bone and one on the inside of the knee, the two former ones quite $\frac{1}{2}$ in. deep and showing as a bluish pocket when the animal was skinned; it is suggested that the young when carried inserts its fingers into these two holes, just of such a size, and is able to take a grip on the collar bone of its mother, its toes no doubt bracing itself against the parental legs. I have no idea if these holes are seasonal though they are certainly present during pregnancy and I have not found them in males, whilst an immature female Long Nosed Monkey certainly had indications of them.

Pygathrix natunae.

LANGUR. We have a pair of these collected by Dr. Hose in the Great Natuna Islands in 1895; they are light brownish above with the limbs and tail dark brown (possibly black when fresh); the underside is yellowish white as are also the inside of the limbs, and the posterior surface of the thighs which last is a very distinctive feature. The crown is rather dark brown with no frontal spot; the young are unknown.

Nasalis larvatus Wurm.

THE LONG NOSE MONKEY; Sarawak Malay: *Orang Blanda*; Brunei Malay: *Bankatan*; Iban: *Rasong*; Tagal: *Bukala*; Murut: *Dungoih*; Dusun: *Magang*.

In the adult male the back and crown of the head are rich chestnut brown, lighter and more brindled on the shoulders; the arms and legs are greyish or fawn coloured, the tail and a patch on the rump yellowish white, often quite white. The cheeks, sides of the neck and the hairs on the throat form a light yellowish ruff sharply marked off from the darker upperside and lighter undersurface. The head is very square, the crown flat, the sides and face upright; the actual colour of the face is a sort of dark pink giving in general the appearance of a most grotesque masque. The nose is tongue-shaped, 2-3 in. long, but rather pinched in at its origin, the tip is rounded, depressed and slightly expanded, and there is a shallow groove down the centre: the paired nostrils are situated on the underside. The eyes small, the iris yellow ochre and there is a distinct forward pointing tufted beard under the chin. The female has a rusty brown crown, less well marked ruff, brownish back and greyish rump-patch and tail, in fact is less strongly and less richly marked than the male. The young of both sexes are lighter and more yellow, particularly on the legs and though the crown is reddish brown the back has a greyish tinge; the upper surface of the tail and the rump-patch so conspicuous later on are dark grey and the ruff in some is hardly differentiated.

The Long Nose Monkey and the Brush Tail Squirrel (*Rhithrosciurus macrotis*) are peculiar to Borneo and have no near relatives elsewhere; the Long Nose Monkey is distantly related to the Langurs or Lotongs or Leaf Monkeys of the genus *Pygathrix*.

The shape is most peculiar for the lower part of the chest where the breast bone ends is enormously distended by the huge stomach, almost as in pregnancy, the abdominal and pelvic region being comparatively narrow and slender as in the Macaques, *Scenopithecus* Monkeys and Gibbons; distension in Man and the Mias is abdominal and neither the Rasong nor the Mias have the stream-lined appearance of some of the Lotongs. It frequently walks on the ground when the thickset appearance is most marked, the heavy rounded hind quarters and massive forequarters giving it a rolling, clumsy gait.

In the flesh this monkey often has a sweet sickly not unpleasant smell which may sometimes be so strong (possibly according to season) that it indicates the animals presence before they are visible in the swampy jungle they frequent. Being protected they are quite numerous even close to Kuching, being chiefly found near river banks and neither far inland nor up-country; for some reason they are absent in many parts of the coast division from Igan to Kedurong. They may frequent either large trees or low mangrove swamps but are always found near water; in the Lawas district they swarmed in the mangrove swamps where there were numerous

small platforms of sticks and though the animals in the evening often frequented trees containing fresh nests, I never saw the nests used. A captive male used to gather the surplus Pedada leaves to sit on and I should not be surprised if some sort of platform is used in a wild state.

The most remarkable feature is the nose of the male, about which there are many illusions; it does not hang down in front of the mouth and impede feeding, it is not inhalable and is not to my knowledge held in the hand as the animal leaps from tree to tree: all these assertions have been made. When angry it opens its mouth, slightly raises the tip of the nose so that numerous wrinkles occur at its base, draws in a deep breath through its nose making a loud resonant snore; the inhaling and exhaling of its breath may be heard at some little distance and the whole performance is distinctly menacing, especially as it may be accompanied by a frothy champing of the jaws. The female has a milder, petulant, rather resounding cry faintly suggestive of a Goose.

Contrary to some statements I have seen a wild one drinking on the river bank and a captive drank freely; he wrinkled and turned up his nose as far as possible but the entire tip was often under water and the nostrils always. Its food in a wild state is apparently the young shoots of the Pedada tree on which it thrives in captivity, choosing particularly the buds and green growing tips thus requiring an enormous bundle of foliage to get enough to eat though it takes in the younger leaves as well; it will make an effort to eat most young leaves or grasses or bananas or fruits such as Rambutans but tires of them in a short time. I have never heard of one reaching Europe alive and it is by no means easy to keep at any time. On the whole it is indolent and fearful, usually inoffensive and by no means aggressive; it is however savage in defence of its mate and on one occasion is recorded as coming down out of a tree and attacking a Chinaman's hunting dogs with deft grabs, seizing their paws, conveying them to its mouth and inflicting a bad bite. This is its usual method of offence and I should judge the bite sufficiently strong to break one's finger if it had the chance. The female has been recorded as being most solicitous for its young, snatching away with almost unnecessary violence any food it doesn't think fit.

Rivers are no obstacles to it, for it swims in a powerful sort of "dog paddle" and is able to dive if necessary.

A "Bezoar" stone (*gelaga*) is sometimes found I believe in the stomach, egg shaped, dark green, about $1\frac{1}{2}$ ins. long, quite light and easily broken; as with all such stones it is much prized by the Chinese as medicine.

Macacus irus.

CRAB-EATING MONKEY. Sarawak Malay: *Kra*; Brunei Malay: *Ambok*; Dusun: *Ka*; Tagal: *Ka'u*; Murut: *Jibulan*.

This is the long tailed monkey most often seen wild on river banks and in captivity; it may be greyish drab or even a mild golden yellow, the colour varying individually, specimens from 4000 ft. being almost rufous. No two are quite alike, the male as a rule having the underside of the eyebrows white, becoming startlingly apparent when he raises his brows: sometimes the female also has it. The young are sparsely covered with dark brown or black hairs, the long tail lacking the furry appearance of that of the young Lotongs.

The Kra expresses considerable range of feeling by a series of grunts, more numerous than in its neighbour the "Brok," than whom it is perhaps more refined and less grotesque. Any jungle will do for it from mangrove and nipah swamp to old jungle up to 4000 ft. or more on mountains: it descends to the shore and walks about on the mudflats where it is of course wary, putting up a sharp gallop for a short distance, the tail carried in a graceful curve with the tip just clear of the ground, though when walking it may drag. I have never actually seen it put the tip of its tail down a crabs sand hole but there is not much doubt it does sometimes entice the crab to take a grip, whereupon he is jerked out and eaten; I have heard of a Kra's tail being thus seized by a monster crab who detained the monkey, barely releasing him in time to avoid the incoming tide. The Kra's tail sometimes has a tuft of hairs on the end and may be it is this the crab gets hold of for if you tweak the end of the monkeys tail he jumps like any other animal.

They go in the usual family troops, one old male, various females and half grown ones, all repairing to the same sleeping place—generally a bare tree—for several consecutive nights. The males are savage among themselves, as are also the females, an intruder being set on by both parties as a rule though it is comical to see the old male with a new wife and the old ones trying to drive her away. One young is born, not infrequently to captive ones, usually up in a tree sometime in the night or very early morning. A large Kra weighing 12 lbs. and carrying a young one proved to be a fully adult male.

They probably do have a few "things" in their fur at times but don't scratch themselves much although they hunt assiduously through each others hair; it has been pointed out that they are then seeking newly growing hairs to suck or squeeze out whatever moisture there may be in the root and they will also pluck out hairs on ones arms and legs in the same way.

A lot of harm is done to padi fields and fruit trees, more being wasted than is eaten and the Dayaks have a cruel way of driving them off: one of a troop is caught and an inch or so of a prickly rotan inserted in its anus, the rest protruding—the monkey is then loosed and its friends subsequently try to remove the obstruction

when the recurved thorns of the rotan immediately grip and the screams of the victim cause the whole troop to leave the neighbourhood.

Pulo Kra at Santubong is associated with an alleged white specimen.

The Kra has considerable intelligence and I have heard of some children playing hide and seek with a tame one, the monkey staying behind till the children called him when he started off to look for them.

Malays say that if a captive one has his tail docked it is no use letting him go for no wild troop will take it in, a thing not easily accomplished by a normal one. Ridley records Kras as swimming and diving well on some occasions doing it for fun and staying under water for some time; on another occasion for hours a party of Kras fought a party of Lotongs (*Presbytis femoralis*) for possession of a Rambuntan tree in fruit, the combatants biting fiercely and sometimes falling to the ground together immediately to ascend and carry on; the Kras did not win.

Macacus nemestrinus broeckii Miller (Plate XVII).

THE PIG TAILED MONKEY: Malay: *Brok*; Iban: *Empau*; Murut, Dusun: *Gobuk*; Tagal: *Basuk*.

This monkey is very thickset with a short usually curly tail. The general colour is rather dark fawn, very dark in old specimens, the crown of the head black or a very dark brown, the back, rump and dorsal surface of the tail similarly marked, the black of the back being broader in old specimens and shading off into the dark fawn of the rest of the body. The young have these dark markings restricted forming a marked contrast to the light fawn of the rest of them. There is in all a very pronounced whorl on the crown, all the hairs in front of the ears pointing forwards; no crest is present except in one case in which I noted two collateral whorls.

The Brok has not such a good vocabulary as the Kra but is if possible more vivacious, and certainly more grotesque; the tail is a good indication of its feelings hanging down limply when the animal is uninterested and curling up S shaped, as in the Plate, when excited. The full grown animal is very thickset, with heavy chest and shoulders, and a high stern with long hind legs; it is equally as partial to the ground as the Kra, where its gait is a swift but rather clumsy rush. The canine teeth are exceptionally large, particularly in the male and just like those of the African Baboon may be associated with a partly terrestrial life necessitating meeting more possible enemies than it would in the tree tops.

It is found in almost any kind of country, less frequently in nipah and mangrove than the Kra and is as a rule fond of the sea-shore. It grows to a very large size, nearly as large as small examples of the Chacma Baboon of S. Africa, particularly solitary old bad-tempered males known as *Brok tingall*, which are reputed to molest native women at times though I know of no such authentic

Lotong Monkey
(*Pygathrix cristatus*).



The Pig-tailed Macaque
(*Macacus nemestrinus*
broca).

case. White ones do occur, one came from Samarahan years ago and another recently from Kapit: the latter was the property of a Chinaman who regarded it as lucky and worth a considerable price (\$250).

This species is the one used in coconut picking, being taught when young to pluck the ripe nuts at a signal from its owner, usually a tug at a string around its waist or by voice; a few trained ones are exported to the Natunas Islands (Sirhassen). They are not in any sense delicate animals but there are few that are more amusing and grotesque especially when young. stories of their doings being legion for they are amenable to captivity and can in time be loosed to follow their owner about like a dog, even in the jungle.

The Brok has only one young at a time and the period of gestation is about 7-8 months: parturition occupies about fifteen minutes as a rule, generally in the very early morning and does not appear to be unduly painful, the afterbirth being as a rule devoured; the young are quite active when born, learn to cling in about half an hour and to eat solid food in about a month, being in fact one of the most precocious and amusing pets one could wish for when small. The father is not offensive to his offspring and barring illness and accidents Broks may live for as much as thirty years and in times of stress will cross freely with the Kra (*M. irus*) to produce offspring.

Males are rather larger than females and the latter in some cases have a red subcaudal swelling absent in the near relative the Kra (*M. irus*). Females on heat and solitary old males can be vicious and quite a match for most dogs one finds out here.

The Bornean form apparently only differs from the Peninsula form in some small skull characters, but there are other forms in Sumatra, various small islands and right away to India. Quite a number of forms have been described from Borneo such as *arctoides*, *melanurus* and *maurus* but there is probably only one Pig Tailed Monkey in Borneo.

SUBORDER ANTHROPOIDEA.

(Man and Apes).

Leaving out Man the members of this Sub-Order include the Gorilla, the Chimpanzee, the Mias and more remotely the Gibbons or little Wa-Was, much more like Monkeys in their small size and presence of hard callosities on their "sit upons" but differentiated at once by the absence of a tail.

Naturally considerable interest attaches to the Mias and the Wa-Wa as being mixed up in Man's ancestry for whilst nobody seriously believes these days that Man is descended directly from Apes it is fairly well accepted that both have descended from the same ancestor—which I have been told is the "same thing"—and are cousins some few or many times removed.

I find it impossible to decide which of the Apes is nearest to Man though anatomically the Gibbon is perhaps the most remote; each one of them is like Man in some characters but differs in many others so that it needs no mean effort to sum up the possibilities. Even the Wa-Wa has the chin most like Man, more or less vertical or even protruding a little and the form and arrangement of its molar teeth is said to be very human; the Mias has the most man-like brain of them all but is undoubtedly inferior in intelligence to the Chimpanzee.

Wa-Was are great favourites in captivity and if the same cannot be said of the Mias it is a point of general interest to note their common ailments in captivity. They usually succumb eventually to pneumonia, which takes the form of short and very quick breathing, coughing and gasping, high temperature to be felt on hands or face, the lips blue and the nose hot and dry, frequently exuding or coughing up mucous which is particularly dangerous owing to bacterial infection; animals in this state should be separated and should they happen to die, they and their belongings should be burnt and the cage well disinfected, if not burnt as well to avoid infection. Mias or Wa-Wa effected in only one lung always lie on that side of the body to give the other lung a chance to function; when both lungs are effected they sit upright but the arms, head and shoulders droop forward markedly. Very little can be done for them when really ill, quinine and aspirin may be safely given, a couple of grains twice a day and as they nearly always die of heart failure a teaspoonful or so of Brandy twice a day bucks them up and will also induce them to eat a little if they have been off their food. Perhaps the best one can do is to make some sort of a flannel waistcoat with armholes and hope they will not be too liverish when you try to put it on but unfortunately the Mias at any rate does not take kindly to this treatment: every effort should be made with sacking to somehow keep the body at an even temperature and damp or cold cement floors avoided as sleeping places.

Worms, colds and fever seem to come and go without hurting them if care be taken but diarrhoea particularly in Wa-Was is a thing to avoid; both animals greedily eat any number of bananas and a diet of these always brings it on. Unpolished rice, boiled but not steamed and served slightly warm, seems a good diet but lumps of cold, wet, soggy rice are harmful as these apes do not chew their food much.

***Hylobates cinereus abbotti.* (Plate XIX).**

GIBBON. Malay: *Wa-Wa*; Iban: *Empliau*; Murut, Kadayan and Dusun: *Kalawat*; Kayan: *Wok Wok*.

As with the Mias no two Gibbons are quite alike in regard to colour and skull characters so that altogether four races have been proposed from Borneo, all allied to the now rather rare Javan

H. c. cinereus. With *mulleri* from S. E. Borneo, distinguished by its brownish lower parts and extremities and with *albibarbis*, paler and with white whiskers from S. W. Borneo, I have nothing to do; Sarawak has two Gibbons, *abbotti* and *funereus*. The former is found in the Kapuas River, in the Kuching and Saribas area even up into the Baram and is usually mouse grey in colour, though occasionally a much lighter silvery grey, with a very indistinct dark cap on the head; *funereus* the common north Bornean form is usually a dark almost chocolate colour often with a paler grey patch on the rump: there are no all black specimens and the Wa-Wa is remarkable on the whole for being darker coloured below than above.

There is probably no more popular pet than a Wa-Wa, its cleanly habits, bright beady eyes, perky, intelligent expression and its engaging ways soon endearing it to its owner. On the ground it walks upright with rather rolling gait, its long arms bent upwards at the elbow but its hands rather drooping downwards: in the trees its agility is astonishing and it will leap outstretched between branches 40 feet apart it is said, executing incredible and most graceful attitudes as it outstrips terrestrial followers. Wa-Was are highly strung, almost a bundle of nerves and on sudden, abrupt or alarming movements are capable of inflicting a severe bite with their long canine teeth; for the most part they are however exceptionally affectionate mixing when wild with other monkeys and even the Mias, whilst in captivity dogs, cats, bears, and even the surly Binturong fall for its charm as well as its human owners, nor is it above going to the assistance of its friends and helping them in their fights.

One of its most notable features is the almost bird-like, cheery, bubbling call it makes early in the morning or when disturbed and it is impossible to convey by words this most characteristic early morning noise; unfortunately Wa-Wa's flesh when in condition is preferred by the natives even beyond pork and the Kayans construct a bamboo call to allay its suspicions as they approach it; the fat stores in the armpits and groin are also much valued by them as a cure for rheumatism and there is a marked absence of Gibbons in the neighbourhood of those nomad hunters the Punans.

Its food in a wild state seems to consist of fruits, shoots and young leaves though it seems to eat most things in captivity and clears out all the Spider webs in ones house; it most frequently dies of pneumonia or of diarrhoea, this last helped on by too many bananas of which it is very fond. Although undoubtedly delicate they are said to have been acclimatized in France, where some run loose in a large park; drinking is usually performed by dipping the back of the hand in the water and licking the drops on the hairs. Asleep it sits with its knees all humped up under its chin and arms folded across its chest and though it makes no sort of a nest for itself a captive one used to loll on its back in the old nests left by a Mias.

The young are said to be born after from 7-9 months gestation and may stay with the mother in some cases for upwards of two years, the male sometimes leaving the troop and accompanying her for a time after the birth. A young one clinging to its mother appeared in size to be half grown and quite helpless: it couldn't walk on the ground, over-balanced itself but learnt in three days and became quite tame in that time; its teeth were quite large enough to draw blood when it bit but its food such as a Rambutan fruit at first to be skinned for it.

A fossil Ape from the Miocene of France does not appear to be generically separable from the Wa-Wa.

Simia satyrus.* (Plate XIX).

Malay: ORANG UTAN; Iban: *Mias*; Sennah: *Marah*; Kayan: *Koyang*; Dusun: *Pagiuh*.

No two *Mias* are alike and it would be difficult to say even now how many kinds there are or if those found in N. Sumatra differ from the Bornean ones. In general their appearance is much the same, covered with usually long hair either of a light sienna red or some shade down to a dark chestnut; the legs are short the arms comparatively long and thick, making the short barrel shaped body look insignificant. The head is the most prominent feature and varies considerably; it is by no means certain but generally accepted that both Sumatran and Bornean females have the ordinary rounded head and snout as in the illustration but that males may have either a similar head or else enormous lateral cheek pouches producing a most grotesque appearance. These expansions are described by Beccari as due to accumulations of fat over the masseter muscle just in front of the ear and he is inclined to regard them as analagous to the hump of the Indian cattle, the protruberances (warts?) on the face of *Sus verrucosus* (The Javan Warthog) and I have even heard them compared with the enlarged tail of the Fat Tailed Sheep or the occasional accumulations of fat in the lumbar region seen in Kalahari desert tribes; Beccari even points out that "steatopygia" (or accumulation of fat) sometimes becomes apparent in humans between the cheeks and ears. The storing of fat is usually associated with hard times and is frequently only temporary but there can be no doubt that the face expansions of the *Mias* are quite permanent and that there is always an abundance of food for the animal so that it is by no means clear why only some of the males, often in an immature state, should apparently needlessly start to store up fat whilst the more fortunate majority of its relatives have no need to do so—in fact it is difficult to see any reasonable argument for supposing the facial expansions are for the purpose of fat storing. They are nevertheless most extraordinary and rather resemble half a plate tacked on to each side of the face, thicker nearer the head and not more than about

*I believe "*Pongo pygmeus*" was selected by the International Nomenclature Committee.

The Gibbon
(*Hylobates cinereus abbotti*).



The Orang Utan
(*Simia satyrus*).

an inch or so at the rim, which does not carry the external ear as is sometimes stated; from the flattened nature of these expansions it is supposed the name "Mias tjaping" meant "pappan" or planks, and as an alternative theory it is said "tjaping" refers the shape of the face to the small object thus known and used to cover the parts of very small female children, but this object is however little used among Bornean tribes and is known to them as "takup."

Descriptions of dissections of the lateral face expansions and the laryngeal sacs are always of interest: the former consists of masses of fatty tissue on a fibrous framework, the fat cells being particularly dense within and more sparsely arranged round the edges. Paired lateral sacs are situated under the chin and accessory sacs may extend as far as the arm-pits; their use is unknown and they appear to be absent in females: in outward appearance they are covered with a thin, white, wrinkled almost blister-like skin, which wobbles like a jelly at every movement.

As far as its habits are concerned, the Mias is for practical purposes arboreal, only descending to the ground on exceptional occasions; travellers stories and the travesties portrayed of its certainly unusual appearance have led to a general belief in its ferocity, a belief totally incorrect though when wounded or molested the Mias can very naturally exert such strength as to make him a fearsome opponent. Normally encountered in the tops of its native trees there are few more benevolent animals and the Mias if unmolested merely temporarily suspends its occupation to examine his relative down below, regards him with no show of fear or anger but a mild and wholly benevolent curiosity which one imagines at times to extend to an amiable grin or its rather grotesque countenance. After a time it may become so bored as to resume its former occupation and pay no further intention to the intruders. He is nevertheless a cunning fellow, for when the Macaque or Lotong Monkeys suspect a man about they quite needlessly go bounding off through the trees, at once betraying themselves by the loud rustling of the branches—not so the Orang Utan who sits dead still where he is when suspicious and in this way I am certain very frequently escapes detection. With a party of Dayaks I once sat and smoked a cigarette at the foot of a tree and it was not until nearly time to move on that someone noticed a large Mias peering benevolently at us from the next tree; even when he had satisfied himself the only further indication of his presence was the light rain of small sticks and twigs that were occasionally broken off in feeding operations and he made very little greater commotion in eventually moving off at a speed which outstripped us along the steep hill side. I believe on river banks and more thickly populated parts they do show a quite evident desire to get out of sight of man and I have even heard of a mother parting with its clinging offspring at the sight of a boatload of men, leaving the little one to

follow at its own pace: in fact it is said that the female not infrequently abandons its young when harassed by close pursuit but this I do not believe without further evidence for the Dayak is maybe providing an excuse for the non-appearance of the female which he is not supposed to shoot for the purpose of taking its young. Under ordinary circumstances the Mias is however an excellent citizen and I have seen a full grown male and female contentedly eating the "Kayu Ara" berries in the same tree with a troop of Wa-Was unconcernedly mixing within their reach on neighbouring branches, the contrast between the cheery Wa-Wa and solemn old Mias being almost ludicrous but in no way leading to bad feeling between them. The captive young ones have a most engaging way of rolling their eyes, pursing their lips, and drawing up the corners of their mouths when feeding time approaches and I have seen just this comic, demure child-like or senile expression on the face of huge captive males of enormous strength, an expression which if recognized would call forth such expressions as one applies to a nicely behaved child or some dear old man rather than the harsh epithets of those who can see no further than the bizarre appearance of brutishness. In a wild state and unmolested, Mias exhibit little more than a benevolent curiosity towards man and the extremely child-like and almost pathetic expressions that can be assumed in captivity point to the Mias as an extremely peaceful and gentle animal when left to himself, always remembering of course that both temper and strength are there in reserve for use when aroused. I have not noticed it as a particularly noisy animal: when annoyed it is liable to purse its lips out into a point, cover the opening with one hand, noisily suck in a deep breath, and let out an enormous coughing belch closely followed by another whistling intake of breath. Stories of Mias molesting native woman have not been authenticated and are probably only a product of the Rablesian sense of humour rather characteristic of Dayaks.

Mias as everyone knows make a kind of platform of sticks on which they sleep at night and even during the day but I have never seen captive ones make any sort of roof or make use of leaves to keep the rain off, as is sometimes alleged. Nests are of two kinds, either a flat platform or more usually a deep triangular shaped affair in the upright fork of a tree: the nest is neither always situated very high nor in a big strong tree and what the Mias aims at is to have several branches handy which it can grip with its hands and feet as it sleeps so that sometimes a ridiculously small but much branched tree may be chosen even by a full grown animal, the whole outfit not thirty feet from the ground far below tree top level. The branches are bent over and crossed to make the foundations of these nests and neighbouring branches or twigs are bitten or torn off and laid on top, the Mias flattening them down with the outer postaxial border of its forearm, testing the nest for comfort and if necessary altering the arrangement of the leaves; a

fresh nest is almost certainly made every night and I counted eleven such nests still with green leaves all close together near a "Kayu Ara" fruit tree where a pair were feeding; there was one very large nest big enough to fill a bullock cart and situated in the arm of a large branch of a tree but I am not certain it belonged to the Mias and it was certainly much older than the other nests.

The distribution of the Mias in Sarawak is peculiar in its relations to the rest of Borneo; it occurs in parts of N. Borneo† though I don't know the details and it is common in W. Borneo, the Landak River and right up the Kapuas River. Now the Mias is very sensibly fond of neither cold nor rain, in fact the damp is his worst enemy and for this among other reasons the occurrence of Mias at 3000 ft. is very exceptional* nor is he as common in the immediate lower vicinity of mountains as he is at the foot. For some 70 miles the Kalinkang mountains run N. E. and S. W. forming a watershed between that part of the Kapuas river running S. W. and numerous short Sarawak Rivers running West into the Sea and it is obvious that these mountains form an obstacle to the movements of Mias which are common on the Kapuas and curiously enough on the Sarawak side. The explanation lies I think in a gap in the Kalinkang Mts. which towards Lobok Antu slope away almost to sea level eventually to rise on the other side as the Batang Lupar Mts. and stretch away unbroken Northwards into Central Borneo. It is therefore more or less true that the Mias is confined to a range bounded on the N. E. by the Rejang, R., on the W. by the Sadong River: the Orang Utan has flowed through from Dutch Borneo and filled up suitable and available places, his distribution as a matter of chance exactly paralleling that of the early Sea Dayaks, who originally occupied the Saribas area and whose further migrations have been a matter of history. The Kalinkang Mts. lose their continuity at the Sadong River and there remains but a few broken hills to prevent the Mias of the Landak River straying into upper Sarawak; it is therefore peculiar that reports of its occurrence there are confusing; a few were supposed to have been found in the old days according to Beccari but they are certainly only occasionally found there now and most of the natives have nothing but the most unreliable records of their appearance. That they did occur is certain, for Everett

† There is a single large ♂ "Mias Pappan" skull hanging in the Leppu Tau house at Long Mou in the Ulu Baram; it was said to have been taken in the neighbouring S. Silat two generations ago and it is difficult to see how it got there for Mias are unknown and always have been in the Baram district. Some Ulu Baram Punans, the nomad hunters, also had a story of how they once saw a big bundle of sticks in a tree from which a Mias emerged; the Punans ran helter-skelter dropping "parang" and blow-pipe quivers in their terror, a fact which indicates the animals rareness to even the keenest hunters.

* Whitehead however records them at 8000 ft and Haviland at 6000 ft. on Mt. Kinabalu.

records two imperfect skulls belonging to the British Museum taken from Chinese goldwashers who had found them in a crevice of the Limestone hills at Paku but nowadays though a possibly stray one may be found, the Mias is absent from all that region adjacent to the watershed of the Landak River which offers no obstruction to it passing into Sarawak.

As I have remarked elsewhere it is useless to quote the antics of ones pets as instances of intelligence for one has no record of what it has previously assimilated but there is no doubt a young Mias can become a most endearing object once one gets over its undoubtedly repulsive first impressions: having gained its confidence it behaves with a most child-like simplicity, and is fond of food and play: sudden rages are quickly forgotten and it has a most appealing sympathetic demeanour when in difficulties. One that I had for four years seemingly existed without a dull moment. It would smoke native cigarettes—a pinch of Tobacco in a palm leaf, grasp the “roko” between thumb and forefinger, put the unlighted end in its mouth holding it with the hand palm upwards, draw and blow the smoke out of its nose and hastily consume the ash presumably for the sake of the salt; it demanded a light when the cigarette went out but had no use for European cigarettes, always tearing them open to see the inside. Originally, it had an expanded metal cage but it used to hook a forefinger through the mesh, brace its two hind feet against the cage and “ping” went the piece of metal and then the corners of her half open mouth used to turn up a bit as always when amused: the openings made were closed by wire, the two ends being twisted together but she very quickly learnt to untwist them or to make use of a nail or piece of wood as a lever to help. All snakes and a small crocodile were carefully avoided: a banana was placed beside one of the latter: the Mias tried to scrape it away from the “croc’s” vicinity with a short stick and easily succeeded with a longer one with which the “croc.” was heartily beaten from an overhead position. She used to tease a small Honey Bear and the two used to roll about locked in pretended combat and though friendly with a Gibbon she had no use for any other Mias, larger or smaller, in her cage and displayed an almost devilish ingenuity in biting her opponents fingers and toes till the other could hardly climb. She was not a mischievous animal like Monkeys when loose but had her share of devilment: when I was away once she objected to the temporary occupant of the house, climbed up into the roof with a light rotan chair and endeavour to drop it on the unsuspecting man as he entered: she is also said to have spent a Sunday afternoon hammering with a piece of wood on the tin roof below which the same man was trying to sleep, the Mias descending now and then and poking her head round the door to see how he was getting on. Telephone wires were a strong point and she used to swing on them until she could catapult into an adjacent

tree, affording one much relief from the ever tinkling bell; the gardener's tiffins were frequently unearthed and eaten whilst she once pulled some shingles off the kitchen roof and was caught clutching a pine-apple and a bottle of vinegar as she tried to climb a nearby tree.

Mias are intensely ticklish and rather enjoy it up to a point, the neck region being particularly sensitive but for this reason they should *never* be tied up with a collar round the neck for the miserable animal is in a state of torment for a long time and as it is almost impracticable to tie them round the waist—they always get away—Mias should be kept in cages or better still quite free. As a matter of fact it is now forbidden to catch, keep, kill or export Mias except in special circumstances, a not unreasonable restriction for it has but a very limited distribution in a few districts of Sumatra and Borneo and though not uncommon in places, a slow breeding animal of such interest can hardly hope to last for long when a single consignment of over 70 is shipped to Europe from one place, a corresponding number having been no doubt killed or maimed in the procuring of even these.

The intimate details of a Mias' life are unknown and owing to the extreme difficulty of observation will probably remain so; one never meets more than three in a party but how far they are monogamous, pair for life and so on is quite unknown. Moreover the age of Mias is almost impossible to estimate for the closing of the cranial sutures—the lines marking the limits of the bones of the cranium—is no guide to age as it is in man, for some sutures that close in the latter before second dentition remain open long after that event in the Mias; the new teeth appear before he is half grown, in fact at about 8-10 years judging by captives and it is very possible that Mias take nearly as long to mature as humans (anyway Asiatics) and barring accidents live just as long: the front incisor teeth are the first to change and the cutting edges are not level but each have four "cusps" regularly disposed, one on each lateral edge and two equally spaced in between. Dropped teeth are never found. The median sagittal crest is a fair sign of age in males but varies in females: the angle of the jaw is no indication of sex as it is in man; moreover extra molar teeth are not uncommon, sometimes even incisors too so that a Mias skull is a poor guide to age and sex as a rule.

Notwithstanding this and other variations, neither fur nor skull characters being distinctive, out of a mass of some 280 skulls from the right bank of the Kapuas River at least six races were made, founded chiefly on cranial capacity: none of these races can be expected to stand for one of the most variable of Mammals.

I have mentioned the impossibility of here summing up its anatomical relations to Man but it appears to exhibit a number

of primitive, specialized and retrogressive features which on the whole place it perhaps further from Man than the Chimpanzee and Gorilla, two Apes which except in the matter of size have much in common: though less intelligent perhaps than its neighbours the brain of the Mias is to look at the most human of the three.

A broken canine tooth from the lower Pliocene of the Siwalik hills in Upper India has been said to closely resemble that of the Mias, all the more astonishing as remains of Apes belonging to the same genus as the Chimpanzee have also been found, these two Anthropoid Apes therefore once occurring in the same region.

APPENDIX A.

Alphabetical list of Native names for Bornean Mammals, with corresponding common and Scientific names.

Aam	Milano	Bear Cat	Arctictis binturong
'Aji bulan	Iban	The Moon Rat	Gymnura rafflesi
Angkis	"	Porcupine	Trichys lipura
Ambok	Malay	" Kra "	Macacus irus
Babi utan	Malay	Wild Pig	Sus barbatus
Babui	Kayan	" "	" "
Badak	Malay	Rhinoceros	Rhinoceros sumatranus
Bakah	Kalabit	Wild Pig	Sus barbatus
Bakass	Dusun	" "	" "
Balukun	Murut	Scaly Ant-eater	Manis javanica
Bangat	Kayan	Hose's Monkey	Pygathrix hosei
Bangkaut	Murut	Flying Fox	Pteropus edulis
Bankatan	Brunei	Long Nose	
	Malay	Monkey	Nasalis larvatus
Banteng	Malay	Wild Ox	Bos sondaicus
Basing	Tagal	Various Squirrels	Sciurus sp.
Basing baiong	Kadayan	Brush Tailed Squirrel	Rhithrosciurus macrotis
Basuk	Tagal	" Brok "	Macacus nemestrinus
Bawah	Murik	Pine Marten	Mustela flavigula
Begulu	Kenyah	Leopard Cat	Felis bengalensis
Belabangan	Dusun	Small Mouse	
		Deer	Tragulus kanchil
Belaloh Asing	Kenyah	A Small Squirrel	Sciurus notatus
Besalong	Tagal	Wild Ox	Bos sondaicus
Bijit	Iban	Black Monkey	Pygathrix chrysomelas
Binturong	Malay	Bear Cat	Arctictis binturong
Bragok	Iban	Pine Marten	Mustela flavigula
Bran bran	Malay	Otter	Lutra cinerea
Brok	"	Pig Tailed Monkey	Macacus nemestrinus
Bruang	"	Honey Bear	Ursus malayanus
Bukala	Tagal	Long Nose Monkey	Nasalis larvatus
Buri	Kenyah	Moon Rat	Gymnura rafflesi
Caloni	Tagal	Scaly Ant-eater	Manis javanica
Camansur	"	Rhino	Rhinoceros sumatranus
Chek puteh	Kayan	Stoat	Putorius nudipes
Dengan ruit	Kalabit	Badger	Mydaus lucifer

Doyong	Malay	Sea Cow	Halicore dugong
Duimbang	"	Mongoose	Herpestes brachyurus
Dungoih	Murut	Long Nose Monkey	Nasalis larvatus
Engkarabak	Iban	Giant Squirrel	Ratufa ephippium
Enkoyong	Kayan	Mias or Orang Utan	Simia satyrus
Enkuli	Iban	Clouded Leopard	Felis nebulosa
Entamba	"	Flying Fox	Pteropus edulis
Enturun	"	Bear Cat	Arctictis binturong
Empau	"	" Brok "	Macacus nemestrinus
Gajah	Malay	Elephant	Elephas indicus
Galling	Iban	White faced Civet Cat	Paradoxurus leucomystax
Gobuk	Murut	" Brok "	Macacus nemestrinus
Gurat-gurat	Dusun	Slender Civet Cat	Linsang gracilis
Haji bulan	Iban	Moon Rat	Gymnura rafflesi
Hangangan	Kenyah	Stoat	Putorius nudipes
Hawat	Kayan	Flying Fox	Pteropus edulis
Ingkat	Iban	The Tarsier	Tarsius spectrum
Jabu	Land Dayak		Sciurus prevostii kuchingensis
Jani	Iban	Wild Pig	Sus barbatus
Jellu	"		Any animal
" labi	"	An aquatic Civet Cat	Cynogale barbatus
" miau	"		A Cat, <i>Felis planiceps</i> in particular
" merah	"	The Red Monkey	Pygathrix rubicundus
Jibulau	Murut	" Kra "	Macacus irus
Jugam	Iban	The Honey Bear	Ursus malayanus
Kalam	Tagal		Rats and Mice
Kalassie	Kayan	The Red Monkey	Pygathrix rubicundus
Kalawat		Gibbon	Hylobates cinereus
Kamaya panas	Iban	Large Mouse Deer	Tragulus javanicus
Kasui	Land Dayak	Civet Cat	Viverra zangalanga
Kawat	Kadayan	Moon Rat	Gymnura rafflesi
Keduran	Tagal	Flying Fox	Pteropus edulis
Khaitan	Kadayan	Bear Cat	Arctictis binturong
Kijang	Malay	Barking Deer	Muntiacus muntjac
Kikok		Hose's Monkey	Pygathrix hosei

Kleho	Iban	Wild Ox	<i>Bos sondaicus</i>
Kluang	Malay	Flying Fox	<i>Pteropus edulis</i>
Koyong	Kayan	Orang Utan	<i>Simia satyrus</i>
Kra	Malay	Long Tailed Monkey	<i>Macacus irus</i>
Krampu	Iban	Brush Tailed Squirrel	<i>Rhithrosciurus macrotis</i>
Kubong	Malay		Most Bats
„ merah	„	Red Flying Squirrel	<i>Pteromys nitidus</i>
„ plandok	Iban	Flying Lemur	<i>Galeopterus volans</i>
Kuching batu	Malay	Leopard Cat	<i>Felis bengalensis</i>
Landak	Malay	Porcupine	<i>Hystrix mulleri</i>
„ dudul	Iban		
Lakud	Sennah	The "Tarsier	<i>Tarsius spectrum</i>
Langah	Dusun	Flying Lemur	<i>Galeopterus volans</i>
Limpungor	„		<i>Hylomys suillus</i>
Lomba lomba	Malay		Any Porpoises or Dolphins
Lotong	„	A grey monkey	<i>Pygathrix cristatus</i>
Magan	Dusun	Long Nose Monkey	<i>Nasalis larvatus</i>
Mangka	Kenyah	Giant Squirrel	<i>Ratufa ehippium</i>
Mantok	Dusun	A Pygmy Squirrel	<i>Nannosciurus whiteheadi</i>
Marah	Sennah	Orang Utan	<i>Simia satyrus</i>
Merogang	Kadayan & Dusun	Red Monkey	<i>Pygathrix rubicundus</i>
Mias	Malay	Orang Utan	<i>Simia satyrus</i>
Munin	Kayan	A Civet Cat	<i>Arctogale leucotis</i>
Munsang akar	Malay	„ „	„ „
Munsang pisang	„	Stoat	<i>Putorius nudipes</i>
Munsang	Iban		Any Civet Cat
Oho	Kayan	Pigmy Squirrels	<i>Nannosciurus sp.</i>
Orang blanda	Malay	Long Nose Monkey	<i>Nasalis larvatus</i>
„ utan	„	“ Ranga-tang ”	<i>Simia satyrus</i>
Oucang	„	Loris	<i>Nycticebus tardigradus</i>
Padi bharu	Iban	Aquatic Civet Cat	<i>Cynogale barbatus</i>
Padungan tana	Kayan	Barred Civet Cat	<i>Hemigale hardwickei</i>
Paguih	Dusun	Orang Utan	<i>Simia satyrus</i>
Pankat	Iban	Barred Civet Cat	<i>Hemigale hardwickei</i>

Pangkat				
tekalang	Iban	Parred Civet Cat	Hemigale	
			hardwickei	
Paniki	Dusun	Flying Fox	Pteropus	edulis
Pas daum	Land	Brush Tailed	Rhithrosciurus	
	Dayak	Squirrel	macrotis	
Pasiu	Dusun	Bear Cat	Arctictis	binturong
Pasua	Kenyah	Pine Marten	Mustela	flavigula
Pasun	Iban	Wild Dog		
		(Mythical)		
Paus	Malay	Any Whale		
Pelabun	Kenyah		Sciurus	hippurus
Penyamoh	Kayan		Rhithrosciurus	
			macrotis	
Penyatat	Lundu		Fygathrix	
	Dayak	Black monkey	chrysomelas	
Perut	Kayan	A Monkey	Pygathrix	frontata
Piau		Sambhur Deer	Rusa	equinus
Plandok				
kanchil	Malay	Small Mouse		
		Deer	Tragulus	kanchil
Plandok				
tamping	Iban	Small Mouse		
		Deer	" "	
Plandok napu	Malay	Large Mouse		
		Deer	" javanicus	
Puan	Iban	A Monkey	Pygathrix	frontata
Pukang	"	Pygmy Squirrel	Nannosciurus	exilis
Rasong	Malay	Long Nose		
		Monkey	Nasalis	larvatus
Rimau akar	"	Marbled Cat	Felis	marmorata
" dahan	"	Clouded Leopard	" nebulosa	
Ringin	"	Otter	Lutra	cinera
Rusa	"	Sambhur Deer	Cervus	unicolor
Salum	Tagal		Sciurus	prevostii
			rufoniger	
San	Miri	Wild Pig	Sus	barbatus
Sapuan	Kenyah		Sciurus	prevostii
			griseicauda	
Schimaruru	Iban	Rhino	Rhinoceros	
			sumatranus	
Sempalili	Kadayan	The Tarsier	Tarsiur	spectrum
Sinang	Iban	A Civet Cat	Viverra	tangalanga
Singagar	Kadayan	A Monkey	Presbytis	sabanus
Tagaut	Dusun	Red Flying		
		Squirrel	Pteromys	nitidus
Tagurog	"	A Monkey	Pygathrix	sabanus
Tambang	Dusun & Murut	Sambhur Deer	Rusa	unicolor

Tamparulik	Dusun	Moon Rat	<i>Gymnura rafflesi</i>
Tampik (doubtful)	"	Wild Ox	<i>Bos sondaicus</i>
Tana	Tagal	Large Squirrel	<i>Ratufa ephippium</i>
Tekalang alud	Kalabit	Banded Civet	<i>Hemigale</i> <i>hardwickei</i>
Teli	Kayan		<i>Sciurus prevostii</i>
Telaoh	Murut	Barking Deer	" <i>griseicauda</i>
Teledu		Badger	<i>Muntiacus muntjac</i>
Tembaiungan	"	Rhino	<i>Mydaus lucifer</i> <i>Rhinoceros</i> <i>sumatranus</i>
Temadu	Malay	Wild Ox	<i>Bos sondaicus</i>
Tengalong	"	A Civet Cat	<i>Viverra tangalanga</i>
Tengiling	"	Scaly Ant-eater	<i>Manis javanica</i>
Tikus bulan	"	Moon Rat	<i>Gymnura rafflesi</i>
" blanda	"	Rabbit or Guinea Pig	
Toh	Kalabit	Stoat	<i>Putorius nudipes</i>
Tuahan	Tagal		<i>Rhithrosciurus</i> <i>macrotis</i>
Tupai kelapa	} Malay	Plantain Squirrel	<i>Sciurus notatus</i>
Tupai pinang			
Tupai kenyulong	"		Most Tree Shrews
Tupai tana			<i>Tupaia tana</i> as a rule
" labang	Iban		<i>Sciurus prevostii</i>
" chelum	Tagal		" <i>caroli</i> <i>Sciurus prevostii</i> <i>rufoniger</i>
Tupai bekarang	Iban		<i>Sciurus prevostii</i> <i>atricapillus</i>
Tun	Land Dayak	Bear Cat	<i>Arctictis binturong</i>
Ulak	Tagal	Wild Pig	<i>Sus barbatus</i>
Wawa	Malay	Gibbon	<i>Hylobates cinereus</i>
Wok wok	Kayan	"	" "

APPENDIX B.

Measurements and Weights of Bornean Mammals including notes
on the colours of their soft parts.

	Total length in inches	Tail in inches.	Height at Shoulder.	Weight in pounds	Collector.	Colour of Soft Parts.
<i>Manis javanica</i> (Ant Eater)	♂ 3' 6.4"	1' 8.4"		16 lbs.	Dr. Abbot	
<i>Halicore dugong</i> (Sea Cow)	♂ 9'			325 lbs.	Prater	
<i>Balaenoptera musculus</i>	♀ 8' 4"			280 "	" S. M.	
<i>Sus barbatus</i> (Bearded pig)	♂ 4' 7.8"	2' 6.5"		185 lbs.	Dr. Abbot	Iris quite white in old specimens, not so clear in immature ones.
	4' 7.4"	2' 4"		140 "	"	
	4' 10"	2' 4.5"		178 "	"	
	4' 9.8"	2' 6.3"		138 "	"	Snout white to flesh; coloured.
		2' 5.1"		182 "	"	Hooves horn.
	4' 8.6"	2' 2"		126 "	"	
	4' 3"			126 "	"	
	4' 5"	2' 5.5"		135 "	"	
<i>Cervus unicolor equinus</i> ♂ (Sambhur Deer)	5' 6"	10"	3' 6"	280 "	S. M.	Iris brown.
				117 "	"	Nose horn with green- ish tinge.

♀	Tragulus kanchil (Mouse Deer)	5' 11"	4' 10"	200 lbs.	Dr. Abbot	Hooves horn.
		6' 2"	4' 1"	150 "	"	"
		1' 7"		4 lbs. 8 ozs.	"	Iris dark brown.
♂		1' 6.7"	2.6"	4 "		Nostrils grayish horn.
		1' 5"	2.6"	3 "	S. M.	Ears pale horn, edged with black.
			2.6"	4 "		
		1' 6"		4 "		
		1' 5"	2.5"	3 "	S. M.	
		1' 10.2"	3.3"	9 lbs.	Dr. Abbot	Iris very dark brown.
♂	Tragulus javanicus borneanus (Mouse Deer)	1' 8.7"	2.5"	7 "	"	Hooves and Muzzle pale horn.
		1' 9.5"	3.25"	8 "		
		1' 9.5"	3.5"	7 "	"	
		1' 10.2"	2.75"	7 "	"	
		1' 9.5"	3.3"	10 "	"	
		1' 10"		10 "		
		1' 9"	3.3"	6 "		
		2' 4"	3.3"	7 "	S. M.	
		1' 11.3"	3.1"	8 "	"	
♀		1' 11"	2.5"	7 "	"	
		1' 9.5"	3.3"	9 "	Dr. Abbot	
		1' 7"	3.9"	6 "	S. M.	

	Total length in inches.	Total inches.	Height at Shoulder.	Weight in pounds.	Collector.	Colour of Soft Parts.
<i>Muntiacus muntjac</i> (Barking Deer)	♂ 3'	6-7"		28 lbs. 10 ozs.	Dr. Abbot	
	2' 11-7"	6-7"	1' 8-4"	35 "	"	Iris dark brown.
	2' 11-4"	5-9"	1' 9-2"	32 "	"	Snout black.
	3' 1-7"	5-3"		28 "	S. M.	Hooves horn.
<i>Bos sondaicus</i> (Wild Ox)	♀ 6' 10-4"	2' 2-8"	4' 3-2"	386 "	Dr. Abbot	
				600 "	S. M.	Iris light sandy yellow with black flecks.
						Muzzle dark greyish black.
<i>Rhinoceros sumatranus</i> (Rhinoceros)	♂ 2' 4"	3-1"		22 lbs.	Dr. Abbot	
<i>Trichys lipura</i>	♂ 2' 6"	7"		17 "	S. M.	
<i>Hystrix muelleri</i> (Porcupine)	♀ 2' 3"	7"		13 "	S. M.	Iris very dark brown.
<i>Hystrix crassipinis</i>						
<i>Rattus muelleri</i>	♂ 1' 6-3"	10-5"		12 ozs.	S. M.	
<i>borneanus</i>	♂ 2' 10"	1' 1"		2 lbs. 2 ozs.	S. M.	
<i>Rhithrosciurus macrotis</i>	♂ 1' 10-8"	12"		2 "	"	
	♀ 5-2"	2-3"		1 "	"	
				3/4 "	"	
<i>Nannosciurus exilis</i> (Pygmy squirrel)						
<i>Funambulus insignis</i>	♂ 11-5"	4-8"			"	Iris very dark brown.
<i>diversus</i>	♀ 1' 2-5"	4-8"			"	

<i>Funambulus everetti</i>									
<i>Sciurus tenuis</i>									
<i>Sciurus lowi</i>									
<i>Sciurus brookei</i>									
<i>Sciurus jentinki</i>									
<i>Sciurus notatus</i>	♀	1' 2"	5.2"	5.75 ozs.	S. M.				
<i>Sciurus prevostii</i>	♂	1' 2"	6.1"	8 ozs.	"				Iris dark brown, claws pale horn.
<i>Sciurus borneoensis</i>	♀	1' 4.1"	7.3"						
	♂	1' 7.4"	9.4"	1 lb.	S. M.				Iris dark brown.
	♀	1' 8.1"	10.5"	1 lb.	"				Claws horn, paler at tip.
	♀	1' 7.4"	9.5"	14.75 ozs.	"				
<i>Sciurus atricapillus</i>	♂	1' 6.5"	9"	13 "	"				
	♀	1' 6.4"	9.5"	15.25 "	"				
<i>Sciurus caroli</i>	♂	1' 7.9"	9.9"	1 lb.	S. M.				Iris dark brown.
	♂	1' 4"	8"	1 " 1 oz.	"				Claws horn, pads black.
	♀	1' 6"	9.2"	14.5 ozs.	"				Iris dark brown, Pads and claws black, latter tipped with horn.
<i>Sciurus rufoniger</i>	♀	1' 6.5"	9.5"	1 lb.	"				Ears and muzzle black.
<i>Sciurus griseicauda</i>	♀	1' 6.2"	9.2"	12½ ozs.	S. M.				do.
	♀			1 lb. 2 ozs.	"				
<i>Sciurus hippurus</i>	♂	1' 8"	10"	14.5 ozs.	S. M.				Iris dark brown.
	♂	1' 7.1"	10"	13 "	"				Pads and claws pale horn, tips of claws black.

	Total length in inches.	Tail in inches.	Height at Shoulder.	Weight in pounds.	Collector.	Colour of Soft Parts.
<i>Ratufa ephippium</i>	♂	2' 8" 2' 6.5" 2' 5" 2' 6.3" 2' 4" 2' 4.6" 2' 4" 2' 6.5" 2' 7" 2.8" 1' 1.8"	1' 5" 1.2" 1' 3.5" 1' 4.6" 1' 5" 1' 3.5" 1' 3.5"	2 lbs. 12 ozs. 2 " 10 " 2 " 6 " 2 " 5 " 3 " 2 " 8 " 2 " 8 " 2 " 9 " 3 " 4 "	S. M. " " " " " " S. M. " " S. M. " Dr. Abbot	Iris very dark brown. Pads and claws horn, muzzle black.
<i>Imomys thomsoni</i> (Flying squirrel)	♀	1' 2"	1' 2"	2 " 8 "	S. M.	Iris very dark brown.
<i>Ursus malayanus</i> (Bear)	♂	4' 5.2"	3.5"	124 "	Dr. Abbot	
<i>Lutra cinerea</i> (Otter)	♀	2' 6.4"	1' 2"	5 " 8 "	"	
<i>Lutra sumatrana</i>	♀	2' 6"	1'	6 "	S. M.	Iris dark brown.
<i>Mydaus lucifer</i> (Badger)	♀	1' 5"	2"	3 " 8 "	"	
<i>Mustela flavigula</i> (Marten)	♀	2' 5.7"	1' 5"	3 "		
<i>Putorius nudipes</i> (Stoat)	♀	2' 6.5"	1' 1.4"	2 " 6 "	Dr. Abbot	Iris brown, nose pink; claws flesh coloured, horn at tip.
	♂	1' 10"	8"		S. M.	

				4 lbs.	S. M.	Iris light yellow ochre; claws horn, pads whitish. Nose pink.
Mungos brachyurus (Mongoose)	♂	1' 5.5"	9.3"		S. M.	
	♂	1' 4.6"	9.6"	2 "	Dr. Abbot	
	♂	1' 5.5"	9.1"	3 "	6 "	
	♀	1' 3.5"	8.2"	2 lbs.	Dr. Abbot	
	♀	1' 5.5"	9.8"	3 "	2 "	
	♂	2' 9"	8.2"	7 "	S. M.	
Cynogale barbatus	♀	2' 7"	5.5"	10 "	Dr. Abbot	
	♀	2' 9.4"	7.9"	12 "	4 "	
Arctictis binturong imm. (Bear cat)	♀	4' 6.5"	2.3"	13 "	"	Iris light yellowish brown.
Hemigale derbyanus	♂	2' 6.8"	1' 2"	3 "	6 "	S. M.
	♂			5 "	8 "	"
	♂	2' 6.9"	1' 25"	3 "	5 "	Dr. Abbot
	♀			6 "	9 "	"
	♀	2' 9"	1' 10"	6 "	8 "	S. M.
Arctogale leucotis	♂			6 "		S. M.
	♀			6 "		Iris dark brown muz- zle black.
				6 "		Claws pale horn.
	♂			3 "		Dr. Abbot
	♀					"
Paradoxurus herma- phroditus	♂			4 "	8 "	S. M.
	♂			4 "	1 "	"
	♀	2' 3.3"	13.5"	1 "	3 "	"
Linsang gracilis						Iris dark brown. Nose pink, pads and claws white.

	Total length in inches.	Tail in inches.	Height at Shoulder.	Weight in pounds.	Collector.	Colour of Soft Parts.
Viverra zibethica	♂	2' 2.5"	1' 1.75"	8 lbs.	Dr. Abbot	
		2' 2.1"	1' 4"	9 "	"	
		2' 1"	1' 8"	6 "	"	
		2' 2.2"	1' 8"	9 "	"	
		2' 4"	1' 9"	7 "	"	
		2' 4"	1' 4"	7 "	"	
		1' 9.8"	1' 4"	7 "	"	
		2' 1.3"	1' 3"	7 "	"	
	♀	2' 3"	1' .75"	8 "	"	
		2' .75"	1' 4"	9 "	"	
		2' 1.2"	1' .75"	7 "	"	
		2' 1.6"	1' 2"	8 "	"	
		2'	1' 2"	10 "	"	
Felis planiceps	♀	2' 6"	1'	6 "	"	
		1' 11.5"	5.4"	9 "	"	
				5 lbs.	S. M.	Iris pale grey with almost a pinkish tinge.
				10 ozs.		
				10 ozs.		
Felis bengalensis (Leopard Cat)		1' 7.8"	5.4"	4 "	Dr. Abbot	
		1' 5.5"	5.8"	4 "	"	
		1' 6.3"	5.8"	4 "	"	
		1' 5.8"	5.1"	4 "	"	
		1' 7.1"		3 "	S. M.	
				12 "		
				8 "		
				12 "		
				3 "		
				4 "		
Felis bengalensis (Leopard Cat)	♂			7 "	"	
	♀	1' 3.2"	7.7"	4 "	Dr. Abbot	

Felis temminki									
Felis marmorata									
Felis nebulosa (Clouded leopard)		5' 7.5"	2' 6"	1' 2.5"	44 lbs.	8 ozs.	Blandford		
Galcopterus volans (Flying lemur)	♂	1' 10.5"			2 "	3 "	S. M.		
Gymnura rafflesii (Moon rat)	♀	1' 11.4"			2 "	4½ "	"		Iris black. Ears flesh coloured, tinged with pale yellow.
	♂				2 "	8 "	"		
Ptilocercus lowi	♀	2' 1.1"	9.5"		3 "		"		Nose pink; feet paler, claws horn.
Tupaia picta		1' 4.5"	7.75"						Iris brown. Pads and claws horn.
Tupaia dorsalis		1' 3"	6.05"				S. M.		Iris very dark brown. pads and claws horn.
Tupaia gracilis	♂	11.5"	6.2"				S. M.		Iris very dark brown.
Tupaia minor		11.85"	6.75"			2.25 "	"		
Tupaia tana	♀	1' 3.4"	7.6"			8.5 ozs.	S. M.		Iris dark brown. Nose, feet and claws horn. Pads pale horn.
Tupaia ferruginea									Iris very dark brown,
Cheiromeles torquatus									
Taphozous longimanus									
albipinnis	♀	3"					S. M.		Iris dark brown.
Vespertilio muricola		2' 2"							Muzzle dark brown.
					136 grains		S. M.		

	Total length in inches.	Tail in inches.	Height at Shoulder.	Weight in pounds.	Collector.	Colour of Soft Parts.
<i>Rhinolophus trifolius</i> ♂	3·6"			1 oz.	S. M.	Nose Leaf pale yellow, ears dull yellow. Elbows, knees and edge of tail membrane yellow.
<i>Pteropus edulis</i> (Flying Fox) ♂	11·6"			1 lb. 4 ozs.	S. M.	
♂				2 lbs. 3 "	"	
♀	11·6"			1 lb. 7 "	"	
♀				1 lb. 13 "	"	
<i>Cynopterus brachyotis</i> ♂	3·6"	·3"		1·6 "	"	Iris dark coffee coloured, claws horn. Feet dull black.
♀	3·8"	·3"		1·5 "	"	
<i>Tarsius spectrum</i> (Tarsier) ♀					S. M.	
<i>Nycticebus tardigradus</i> (Loris) ♂	1' 4·7"			3 "	"	Iris light yellow ochre. Nose and feet dull flesh colour.
				14¾ "	"	
<i>Macacus irus</i> ("Kra") ♂	3' 9·5"	1' 10·5"		11 lbs.	Dr. Abbot	
♂				12 "	S. M.	
<i>Macacus nemestrinus</i> ("Brok") ♂	2' 8·9"	8·7"		24 "	Dr. Abbot	
♀				18 "	S. M.	
<i>Pygathrix frontatus</i> ♀	3' 11·2"	2' 3·2"		13 "	"	Iris dark brown, Ears black, <> shaped white spot on forehead. Pads black, claws horn.

Pygathrix everetti	♀	4' 5"	2' 3.5"	14 lbs.	S. M.	Iris dark brown.
Pygathrix hosei	♂	4'	2' 4"	11 lbs.	S. M.	Pads black. Face dark
	♂	4'	1' 6"	10 "	"	grey, eyelids, nose
						and brows light grey.
						Upper lip and chin
						whitish.
Pygathrix cristatus	♂	3' 9.3"	2' 1"	11 lbs.	S. M.	
	♀			12 "	"	
Pygathrix chrysomelas	♂	3' 10.5"	2' 3.3"	14 "	Dr. Abbot	Iris very light almost
		3' 10.6"	2' 4.5"	14 "	"	yellowish ochre. Face
		4' 2"	2' 6.1"	14 "	"	dull black. Feet and
		4' 1.8"	2' 5.5"	15 "	"	hands black.
		3' 9.5"	2' 3.4"	13 "	"	
		3' 9.4"	2' 2.5"	15 "	"	
	♀	3' 9.7"	2' 3.4"	15 "	"	
		3' 7"	2' 2.5"	10 "	"	
		3' 7"	2' 2"	10 "	"	
Pygathrix cruciger	♀	3' 5"	2'	10 lbs.	Dr. Abbot	Iris dark brown. Face
				4 ozs.	"	dark greyish. Pads
						black.
Pygathrix rubicundus	♂	3' 8"	2' 1.5"	10 "	S. M.	
		4' 6"	2' 3.4"	16 "	Dr. Abbot	Iris brown.
		3' 11.2"	2' 3.5"	14 "	"	Ears greyish blue.
		3' 11.4"	2' 3.7"	15 "	"	Face greyish blue, chin
		4' 8"	2' 4"	15 "	"	and round eyes whit-
		3' 10.4"	2' 2.6"	15 "	"	ish. Pads black claws
					"	horn.

	Total length in inches.	Tail in inches.	Height at Shoulder.	Weight in pounds.	Collector.	Colour of Soft Parts.
<i>Nasalis larvatus</i> (Long Nose Monkey)	♀	4' 3.4"	2' 5"	16 lbs.	S. M.	
		4' 4.1"	2' 5.5"	12 "	Dr. Abbot	
		3' 11.3"	2' 3.2"	14 "	"	
		3' 10.6"	2' 3.1"	17 "	"	
		3' 10.1"	2' 2.3"	16 "	"	
		3' 9.9"	2' 2.2"	11 "	"	
		4' 6.3"	2' 2.2"	42 "	"	Iris dark yellow ochre.
		4' 1.5"	2' 6"	29 "	S. M.	
		4' 5.6"	2' 2.4"	38 "	Dr. Abbot	
		4' 5.5"	2' 2"	44 "	"	
		4' 8.25"	2' 4.5"	52 "	"	
		4' 7"	2' 3.5"	45 "	"	
		4' 6"	2' 2.5"	46 "	"	
		4' 6"	2' 2.5"	48 "	"	
♀		3' 7.6"	1' 9.6"	21 "	"	
		3' 10"	1' 11.8"	13 "	"	
		3' 9"	1' 11.2"	20 "	"	
		4'	2' 4"	23 "	"	
		3' 7.6"	1' 10.4"	22 "	"	
		1' 7.7"		12 "	"	
		1' 6.5"		11 "	"	
		1' 8.1"		15 "	"	
		1' 6.1"		11 "	"	
		1' 7.1"		11 "	"	
<i>Hylobates cinereus</i> (Gibbon)	♂	1' 5.3"		11 "	"	
					S. M.	
				4 "	"	Iris brown. Face, Pads of feet hands, black.
					Dr. Abbot	
				4 "	"	
				5 "	"	
				4 "	"	
				9 "	"	
				9 "	"	
					"	
					"	

		13 lbs.	8 ozs.	Dr. Abbot
♀	1' 6.4"	12 "	2 "	"
	1' 6.4"	12 "	2 "	"
	1' 5.7"	12 "	2 "	"
	1' 6.1"	12 "	8 "	"
		12 "	8 "	"
♂	3' 1.6"	450 "		Dr. Abbot
	3' 2.1"	405 "		"
	3' 2.2"	450 "		"
	2' 5.3"	162 "		"
	2' 6.7"	184 "		"
♀	2' 9.5"	225 "		"
	2' 6.9"	192 "		"
	2' 5.7"	135 "		"
	2' 6.7"	188 "		"

Simia satyrus
(Orang Utan)

APPENDIX C.

The following Books and Articles contain much information, scientific and otherwise, relating to Bornean Mammals or their Malayan allies.

- | | | |
|-------------------|----|---|
| Beccari | .. | Wanderings in the great Forests of Borneo. |
| Blandford | .. | Fauna of British India, 1891. |
| Chasen | .. | "Mammals of Singapore;" Singapore Naturalist 1925. |
| Chasen and Kloss | .. | "Some Carnivora, Rodentia and Insectivora from E. Borneo " J.M.B.R.A.S. Vol. 6, 1928. |
| Dammermann | .. | "The Zoo-geographical relationship of Java " Treubia Vol. 11, 1929. |
| Everett | .. | "Mammals of Bornean Islands " P. Z. S. 1893. |
| Elliot | .. | "Review of Primates " Bull. Am. Mus. Nat. Hist. 1912. |
| Forbes | .. | "Monkeys " 2 Vols. |
| Freer | .. | "Mammals of Philippine Islands " Phil. Journ. Sc. Vol. 7, 1912. |
| Flower & Lydekker | .. | "Mammals living and extinct " 1891. |
| Gyldenstolpe | .. | "Mammals from E. and C. Borneo " Kung. Sv. Vet. Akad. Handlingar. Band 60, 1919. |
| Hornaday | .. | "Two years in the Jungle " |
| Hose | .. | "Mammals of Borneo " 1893. |
| Kampen | .. | "Zoo-geography of E. Indian Archipelago " Amer. Nat. Vol. 45, 1911. |
| Kloss | .. | "Provisional list of Mammals of Peninsula Region " Journ. F. M. S. Mus. Vol. 2. |
| | | "Zoo-geographical boundaries " Bull. Raffles Mus. No. 2, 1929. |
| Lydekker | .. | "Game animals of India." |
| Lyon | .. | "The Tree-Shrews " Proc. U. S. N. M. Vol. 45. |
| Lyon | .. | "Mammals from Borneo " Proc. U. S. N. M. Vol. 32. |
| | | "Mammals from Borneo " Proc. U. S. N. M. Vol. 40. |
| Moulton | .. | "Guide to Malayan Mammals " Part 1. |
| | | <i>Journal Malayan Branch</i> [Vol. IX, pt. II. |

- Miller .. "Malayan Mammals" Smiths. Misc. Coll.
Vol. 61, 1913.
- Lonnberg and Mjoberg "Mammals from Mt. Murud" A. M. N.
H. Vol. 16, 1925.
- Mjoberg .. "Animal Life and Adventures in the
Malayan Jungles" 1930.
- Ridley .. "Malayan Mammals" Natural Science
Vol. 6, 1895.
"Botanic Gardens Menagerie" J.S.B.R.A.S.
No. 1906.
- Shelford .. "Naturalist in Borneo" 1916.
- Thomas .. "Mammals of Mt. Kinabalu" P. Z. S. 1889.
"Mammals from Mt. Dulit" P. Z. S. 1892.
- Whitehead .. "Exploration of Mt. Kinabalu."
- Wallace .. "Malay Archipelago."

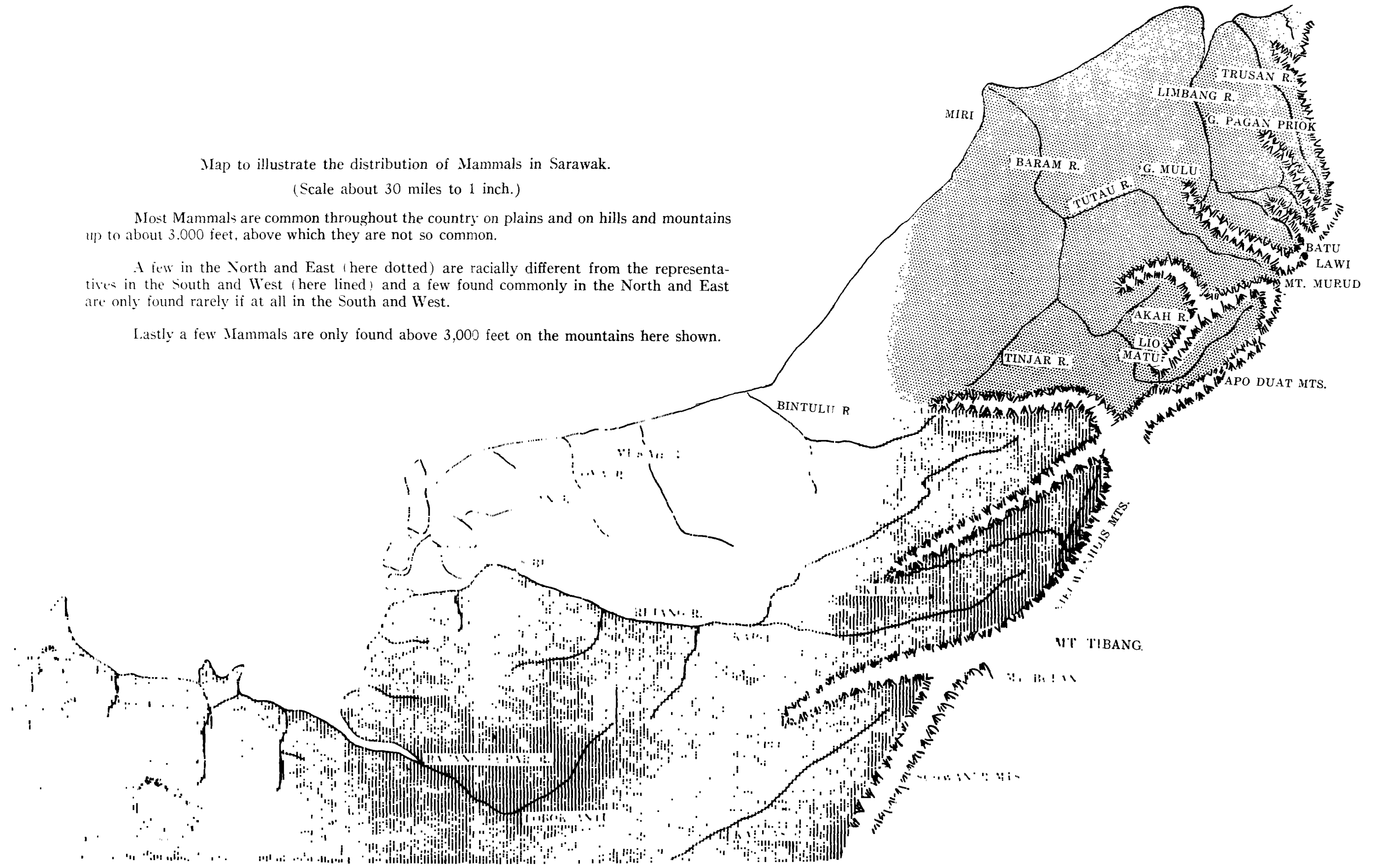
Map to illustrate the distribution of Mammals in Sarawak.

(Scale about 30 miles to 1 inch.)

Most Mammals are common throughout the country on plains and on hills and mountains up to about 3,000 feet, above which they are not so common.

A few in the North and East (here dotted) are racially different from the representatives in the South and West (here lined) and a few found commonly in the North and East are only found rarely if at all in the South and West.

Lastly a few Mammals are only found above 3,000 feet on the mountains here shown.



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